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Organization of African Unity
Organisation de l'Unité Africaine

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P.M.B. 2359
LAGOS, NIGERIA.



CSTR/OUA - SECRETARIAT
P. M. B. 2359
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February 12, 1981

SEMI-ARID FOOD GRAIN RESEARCH AND DEVELOPMENT (SAFGRAD)

OAU/STRC JOINT PROJECT No 31

FIRST WORKSHOP ON FARMING SYSTEMS ORGANIZED
BY THE SCIENTIFIC, TECHNICAL AND RESEARCH COMMISSION OF THE ORGANIZATION
OF AFRICAN UNITY (OAU/STRC) UNDER JP 31 SAFGRAD
12-15 JANUARY 1981 DAKAR, SENEGAL

REPORT AND RECOMMENDATIONS

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No 0092

AGENDA

Monday 12 January, 1981

SESSION I

Opening Ceremony

- 9h.00-10.00 - Welcoming speech by His Excellency, Jacques Diouf, Secretary of Scientific and Technical Research of Senegal.
- Introductory address by the International Coordinator of OAU/STRC JP 31 SAFGRAD.
- Address by the Executive Secretary of the OAU/STRC.
- 10.00-10.15 - Coffee break.
- 10.15-10.40 - Election of officers and adoption of the program.

SESSION II

The Structure of Research on Food Grains

- Chairman: Mr Samba Dieng
- Reporter: Dr Paul Christensen
- 10.40-10.50 - SAFGRAD
- 10.50-11.00 - IRAT
- 11.00-11.10 - ICRISAT
- 11.10-11.20 - IITA
- 11.20-11.30 - ORSTOM
- 11.30-11.40 - IDRC
- 11.40-11.50 - IFDC
- 11.50-12.30 - Discussion

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SESSION III

National Farming Systems Research (work in progress and future perspectives).

- Chairman: Mr Nicou
- Reporter: Dr Charreau
- 14.00 - SAFGRAD Member country reports.
- 14.00-14.10 - Botswana
- 14.10-14.20 - Ivory Coast

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- 14.20-14.30 - Gambia
- 14.30-14.40 - Guinea
- 14.40-14.50 - Sudan (absent)
- 14.50-15.00 - Central African Republic
- 15.00-15.10 - Zambia
- 15.10-15.40 - Discussion
- 15.40-15.50 - Coffee break
- 15.50-16.00 - Mali
- 16.00-16.10 - Sierra Leone
- 16.10-16.20 - Upper Volta
- 16.20-16.30 - Tanzania (absent)
- 16.30-16.40 - Togo
- 16.40-16.50 - Ghana (absent)
- 16.50-17.00 - Guinea Bissau
- 17.00-17.30 - Discussion

Tuesday 13 January, 1981

8.00 Continuation of National Reports.

- Chairman: Dr Jonas Akle

- Reporter: Mr Fillonneau

- 8.00- 8.10 - Mauritania
- 8.10- 8.20 - Ethiopia (absent)
- 8.20- 8.30 - Senegal ISRA
- 8.30- 8.40 - Nigeria
- 8.40- 8.50 - Cameroon
- 8.50- 9.00 - Somalia (absent)
- 9.00- 9.10 - Benin
- 9.10- 9.20 - Niger
- 9.20- 9.50 - Discussion
- 9.50-10.00 - Coffee break

.../...

SESSION IV

- Farming Systems Research by the International
Research Organizations

- Chairman: Dr Bill Morris

- Reporter: Mr Zana J.L. Sanogo

- 10.00-10.10 - SAFGRAD/FSU
- 10.10-10.20 - ICRISAT
- 10.20-10.30 - IRAT
- 10.30-10.40 - IITA
- 10.40-10.50 - ORSTOM
- 10.50-11.00 - IDRC
- 11.00-11.10 - UNIDO (absent)
- 11.10-11.20 - INTSORMIL
- 11.20-11.30 - GTZ (absent)
- 11.30-11.40 - AAASA
- 11.40-11.50 - FAO
- 11.50-12.20 - Discussion

SESSION V

Reports on Farming conditions and the implementation
of technology.

- Chairman: Prof. Adegboye

- Reporter: Mr. J. McIntire

- 14.00-14.10 - FSU/SAFGRAD
- 14.10-14.20 - Malawi
- 14.20-14.30 - ISRA
- 14.30-14.40 - ICRISAT
- 14.40-14.50 - FAO
- 14.50-15.00 - Holland
- 15.00-15.10 - GTZ (absent)
- 15.10-15.20 - IRAT
- 15.20-15.30 - IITA

- 15.30-16.00 - Discussion
- 16.00-16.15 - Coffee break

Wednesday 14 January, 1981

SESSION VI Inter-African cooperation concerning Farming Systems Research.

- 8.00-12.30 - Formation and meetings of 3 working groups.
 - 1- Animal traction and mechanization.
 - Chairman: Dr Marenah
 - Reporter: Dr Rasheed
 - 2- Soil fertilization
 - 3- Cropping patterns and associated crops.
- 10.00 - Coffee break
- 14.00-14.45 - Presentation of the results of working groups on cooperation.
- 14.45-15.15 - Discussion.

SESSION VII Farming Systems Research Methodology, Data collection and analysis.

- Chairman: Mr Niang
- Reporter: Dr R. Swanson
- 15.15-15.30 1- Intensive quantitative village level surveys.
Dr Singh.
- 15.30-15.45 2- Reconnaissance and short term surveys: Dr Swanson,
M. McIntire.
- 15.45-16.00 3- On-farmer field trials: Dr Christensen
- 16.00-16.15 - Coffee break
- 16.15-16.45 - Discussion.

Thursday 15 January 1981

- 8.00- 9.30 - Discussion among specialists
 - Chairman: Dr Ted Baker

- Reporter: Dr Charreau
- 9.30- 9.45 - Coffee break
- 9.45-10.45 - Editorial Committee
- Chairman: Prof. Adegboye
- Réporter: Mr Fillonneau
- 10.45-11.00 - Presentation of the report of the Editorial Committee
- 11.00-11.30 - Discussion and adoption of final report
- 11.30-11.45 - Closing ceremony.

LIST OF PARTICIPANTS

LISTE DES PARTICIPANTS

MEMBER COUNTRIES/PAYS MEMBRES

PEOPLE'S REPUBLIC OF BENIN/
REPUBLIQUE POPULAIRE DU BENIN

Mr DJEGUI Narcisse,
Ingénieur Agronome
Station de Recherche sur les Cultures
Vivrières de Niaouli.
République Populaire du Bénin.

Mr AKLE Jonas
Ingénieur Agronome - Directeur de Recherche
Coton et Fibres.
Département de la Recherche Agro
B.P. 715
Cotonou, R. P. du Bénin

BOTSWANA

Mr LIGHTFOOT Clive
Farming Systems - Agronomist
P/Bag 0033
EFSAIP Project
Gaborone, Botswana

CENTRAL AFRICAN REPUBLIC/
REPUBLIQUE CENTRAFRICAINE

Mr ANDJIGBIA Jean-Innocent
Ingénieur d'Agriculture
Ministère du Développement Rural
Bangui, Rép. Centrafricaine

GAMBIA/GAMBIE

Mr TAAL Saihou,
Scientific Officer Soil fertility
Department of Agricultural
Yundum Experimental Station
Yundum, Western Division
Gambia

GUINEA/GUINEE

Mr GUILAVOGUI Akoi
Ingénieur Agronome
Secrétaire Général de Région
du Développement Rural
R.P.R. de Guinée

GUINEA BISSAU/GUINEE BISSAU

Mr NALETE Maria Augusto
DEPA - Comissariado de Estado do
Desenvolvimento Rural
CP 71 Bissau
Rép. de Guinée-Bissau

Mr BALDE Camilo Camissa
DEPA - Comissariado de Estado do
Desenvolvimento Rural
CP 71 Bissau
Rép. de Guinée-Bissau

Mr SADJO Malan
Engenheiro-Agronomo
Comissariado de Estado do
Desenvolvimento Rural
CP 71 Bissau
Rép. de Guinée-Bissau

Mr ALIU Camara
Engenheiro-Agronomo
Comissariado de Estado do
Desenvolvimento Rural
CP 71 Bissau
Rép. de Guinée-Bissau

IVORY COAST/COTE D'IVOIRE

Mr N'DA Kouadio
Ingénieur Agronome
Bureau d'Etudes Techniques des Projets
Agricoles
04 B.P. 716
Abidjan 04, Côte d'Ivoire

Mr COULIBALY Siaka
Ingénieur d'Etudes
04 B.P. 716
Abidjan 04, Côte d'Ivoire

MALI

Mr SANOGO Zana Jean-Luc
Agronome
DRSPR Division de Recherche sur les
Systèmes de Production Rurale
Sikasso, Mali

Mr DIARRA Tiecouradié
Chef Division DRSPR Sikasso
Institut d'Economie Rurale
B.P. 186
Sikasso, Mali

Mr SY Ousmane
Agro-Economiste
Institut d'Economie Rurale
Division de Recherche sur les
Systèmes de Production Rurale (DRSPR)
B.P. 186
Sikasso, Mali.

Dr AMAL K. Chatterjee
B.P. 141
DRSPR
Sikasso, Mali

MAURITANIA/MAURITANIE

Mr BA Khalidou
Projet DRIG,
B.P. 91
Selibaly, Mauritanie

Mr SOUMARE Abdoulaye
CNRA
B.P. 22
Kirom, Rim Mauritanie

Mr DIALLO Ousmane
CNRADA
B.P. 22
Kaedi, Mauritanie

NIGER

Mr MOHAMED Abdoulaye
Ingénieur d'Agriculture
Directeur du S.A.D.
B.P. 379
Niamey, Niger

NIGERIA

Mr OMIDIJI Matthew Oladeinde,
Senior Research Fellow
Institute of Agric. Res. & Training,
P.M.B. 5029
Ibadan, Nigeria

Dr BAKER Edward Frederic
I.A.R./ABU
Zaria, Nigeria

SENEGAL

Mr DIENG Samba
Ministère du Développement Rural
Building Administratif
Dakar, Sénégal

Mr FOURNIER Jean-Baptiste
Secrétariat d'Etat à la Recherche
Scientifique et Technique
B.P. 3218
Dakar, Sénégal

Mr SAUGER Louis
Secrétariat d'Etat à la Recherche
Scientifique et Technique
B.P. 3218
Dakar, Sénégal

Mr THIONGANE Papa Ibrahima
Directeur Général de l'I.S.R.A.
B.P. 3120
Dakar, Sénégal

Mr M'BODJ Mahawa
Directeur du CNRA de Bambey
ISRA-SBRSI - Sénégal
B.P. 51
Bambey, Sénégal

Mr CAMARA Papa Assane
Centre National de Recherche Agronomique
Bambey, Sénégal

Mr DIATTA Sitapha
CNRA
B.P. 51
Bambey, Sénégal

Mr FALL Mankeur
ISRA - CNRA
B.P. 31
Bambey, Sénégal

Mr NIANG Madicke
ISRA
B.P. 199
Kaolack, Sénégal

Mr DANCETTE Claude,
Agro-climatologiste
ISRA/CNRA
B.P. 51
Bambey, Sénégal

Mr GALIBA Marcel
Sorghum Breeder
ISRA/CNRA
Bambey, Sénégal

Mr DIAW Alioune
Agent de Liaison
B.P. 3120
Dakar, Sénégal

Mr ANGE Alain
Ingénieur Agronome
ISRA
Centre de recherche du secteur
Centre Sud
Kaolack, Sénégal

SIERRA LEONE

Mr SESAY Chernoh Bakarr
Deputy Chief Agriculturist
Ministry of Agriculture & Forestry
c/o MAF Tower Hill
Freetown, Sierra Leone

TOGO

Mr AGBOWOAN Yawovi
Ingénieur Agronome
DRA
B.P. 341
Lomé, Togo

UPPER-VOLTA/HAUTE-VOLTA

Mr KERE Adolphe
Chercheur (sélectionneur mil)
Ministère du Développement Rural
Direction des Services Agricoles (Kamboinsé)
Ouagadougou, Haute-Volta

Mr KABORE Moussa
RPAA
B.P. 960
Ouagadougou, Haute-Volta

ZAMBIA/ZAMBIE

Mr KEFI Chanda
Farm management Research Officer
Magoye Regional Research Station
P.O. Box 11,
Magoye, Zambia

GHANA

CAPE VERDE/CAP VERT

CHAD/TCHAD

TANZANIA/TANZANIE

SOMALIA/SOMALIE

SUDAN/SOUDAN

KENYA

CAMEROON/CAMEROUN

ETHIOPIA/ETHIOPIE

ORGANIZATIONS/ORGANISATIONS

AAASA

Professor ADEGBOYE Oladokun
Telex 31128
University of Ibadan
Dept. of Agric. Economics
Ibadan, Nigeria

F.A.O.

Mr GAUCHON Michel
Spécialiste de la gestion des Exploitations
AGSP
FAO via delle Terme di Caracalla
00100 Rome Italie

Dr MARENAH L.J.
Regional Plant Production and Protection
Officer
FAO/UN
FAO Regional Office for Africa
P.O. Box 1628
Accra, Ghana

F.S.U.

Mr Ram SINGH
Economist FSU/SAFGRAD
B.P. 1783
Ouagadougou, Haute-Volta

Mr Paul CHRISTENSEN
Agronomist FSU/SAFGRAD
B.P. 1783
Ouagadougou, Haute-Volta

Mr Richard SWANSON
Anthropologue FSU/SAFGRAD
B.P. 1783
Ouagadougou, Haute-Volta

ICRISAT

Mr SERAFINI Philip George
Agronomist ICRISAT/Mali
B.P. 34
Bamako, Mali

Mr CHARREAU Claude
Coordonnateur des Programmes de l'ICRISAT
en Afrique de l'Ouest.
B.P. 3340
28 rue El Hadj Amadou Assane N'DOYE
Dakar, Sénégal

IDRC/CEDI

Mr MACNEIL Gordon Bruce
Regional Program Officer
B.P. 11007 CD Annex
Dakar, Sénégal

IFDC

Mr PARISH Dennis Hedley
Director (OUTREACH)
International Fertilizer Development Center
P.O. Box 2040
Muscle Shoals ALA 35660

I.I.T.A.

Mr AGGARWAL Vas
Cowpea Breeder
IITA
B.P. 1783
Ouagadougou, Haute-Volta

Mr WILSON George F.
IITA
PMB 5320
Ibadan, Nigeria

INTSORMIL

Mr FRANCIS Charles A.
Professor Agronomy
Agronomy Dept. & Univ. Nebraska
INTSORMIL
Lincoln, NE, 68506

Mr DENIS Jacques C.
Agronome INTSORMIL
P.O. Box 5248
Department of Agronomy Mississippi State Univ.
Mississippi State MS 39762

IRAT

Mr NICOU Robert
Chef du Service physique des sols
IRAT/GERDAT B.P. 5035
34032 MONTPELLIER - Cedex FRANCE

Mr BENOIT-CATTIN Michel
Ingénieur de recherches
IRAT/GERDAT
B.P. 5035
34032 MONTPELLIER Cedex FRANCE

Mr PICHOT Jean
IRAT-Programme Amélioration du milieu physique
IRAT/GERDAT
B.P. 5035
34032 MONTPELLIER Cedex FRANCE

Mr PIERI Chistian
Chef Service fertilisation et chimie du sol
IRAT B.P. 5035
34032 MONTPELLIER Cedex FRANCE

KANSAS STATE UNIVERSITY

Mr VANDERLIP Richard
Kansas State University
Agronomy Département
Kansas State University
MANHATTAN, Kansas 66506
U.S.A.

UNIVERSITY OF KENTUCKY

Mr BUSCH Lawrence
Associate Professor
University of Kentucky
Department of Sociology
Lexington, KY 40546
U.S.A.

UNIVERSITY OF MALAWI

Mr NANKUMBA John Sinoya
Lecturer
University of Malawi (Bunda College
of Agriculture)
P.O. Box 219
Lilongwe, Malawi

ORSTOM

Mr MILLEVILLE Pierre
Agronome
ORSTOM B.P. 182
Ouagadougou, Haute-Volta

Mr BONNEFOND Philippe
Chercheur
ORSTOM
B.P. 1386
Dakar, Sénégal

Mr FILLONNEAU Claude
Agronome Chef de mission ORSTOM
B.P. 1434
Bouaké, Côte d'Ivoire

NETHERLANDS/PAYS-BAS

Mr VIERSTRA Gerben Anne
Sociologue DRSPR (Mali)
s/c IRRT B.P. 1694 Bamako
s/c KIT MAURITSKADE 63
AMSTERDAM - PAYS-BAS

Mr BROEKHUYSE Jan Th.
Royal Tropical Institute
Senior Research Fellow
LINNAEUS STR 2A
AMSTERDAM - PAYS-BAS

PURDUE UNIVERSITY

Mr MORRIS Wilford Hugh
Technical Coordinator
Purdue FSU
Ag Econ.
Purdue University
Lafayette IN
U.S.A.

Mr SCHRADER Lee Frederick
Dept. Agr. Econ.
Purdue University
W. Lafayette IND
U.S.A.

CNUDI/UNIDO

Mr ARIJS Peter
Junior Professional Officer
UNIDO
B.P. 154
Dakar, Sénégal

USAID

Mr GRAY Robert E.
Agricultural Economist
AID-AFR/RA
Room 3325 NS
Washington DC 20523

Mr JACKSON Robert I.
Senior Agronomist
Agency for International Development
Washington DC 20523
U.S.A.

Mr McSWAIN Arlan B.
SAFGRAD Project Officer
USAID
c/o OAU/STRC Coordination Office
B.P. 1783
Ouagadougou, Upper Volta

Mr WORTHINGTON Paul
Project Manager
USAID Senegal
B.P. 49 c/o American Embassy

Mrs SKAPA Barbara
Project Manager Senegal Cereals Production II
USAID: Bureau d'Agriculture
B.P. 49
Dakar, Sénégal

Mr TRAORE Mamadou
Agricultural Program Assistant
USAID/Senegal
B.P. 49
c/o American Embassy
Dakar, Sénégal

UNDP

GTZ

ROCKFELLER FOUNDATION/
ROCKFELLER FONDATION

FAC

SECRETARIAT

Mr A.H.A. RAZIK
Assistant Executive Secretary &
Officer-In-Charge
OAU/STRC
P.M.B. 2359
Lagos, Nigeria

Dr. M.A. RASHEED,
Director
OAU/STRC/BIS
B.P. 1352
Bangui, Central African Republic

Mr AKADIRI-SOUMAILA K.O.
Coordinateur International
OUA/CSTR PC 31 SAFGRAD
B.P. 1783
Ouagadougou, Haute-Volta

INTRODUCTION TO THE MEETING BY THE

OAU/STRC JP 31 SAFGRAD INTERNATIONAL COORDINATOR,

Mr AKADIRI-SOUMAILA K.O.

Excellency,

Honourable Guests,

Honourable Delegates,

Ladies and Gentlemen,

On behalf of the Organization of African Unity and the Coordination Office of its Scientific, Technical and Research Commission for the Joint Project 31 on Semi-Arid Food Grain Research and Development (JP 31 SAFGRAD), I invite you to observe a minute's silence in memory of the late Mr Amos Odelola, Executive Secretary of the Scientific, Technical and Research Commission of OAU.

Excellency,

Honourable Guests,

Honourable Delegates,

Ladies and Gentlemen,

May I now extend to you the sincere greetings and best wishes of the Secretary-General of OAU, His Excellency Mr Edem KODJO, at present preoccupied by his political assignments and therefore unable, unfortunately, to preside this meeting. This notwithstanding, the 1st Workshop on Farming Systems should, in the optics of priority objectives assigned to JP 31 SAFGRAD by OAU, be crowned with another success. These objectives are, if I may draw your attention to them once again the Research and Development of Food Crops in the Semi-Arid Zones of Africa, taking into consideration:

1. Breeding for disease, insect and drought resistance
2. Breeding for improved yield, nutritional consideration and seasonal adaptability.
3. Research on Farming Systems including catch-cropping, crop rotation and minimum cost packages.
4. Social and agro-economic research on the constraints of the various systems in order to remedy them.
5. Maintenance of soil fertility for long-term sustained yields.
6. Research on the implements of small farmers and the use of animal traction.
7. Research on soil water management, irrigation for small farmers, erosion control and water conservation.
8. Research on environment/yield interaction for a greater utilization of natural resources.
9. Germplasm collection.
10. Phytosanitary and entomological research including crop and stock insects and parasites.

Excellency,

This workshop is being held at a time when several member countries of JP 31 SAFGRAD are experiencing serious crop problems and looking desperately for ways and means of producing enough food crops for their populations. The drought alone is not accountable for this state of affairs. The different farming systems also play a non-negligible role on the matter. In this regard, our researchers are determined to draw up, over the next three days, strategies to aid our farmers and make their work and production profitable. SAFGRAD's Farming Systems Unit has the following objectives:

- a) Analysis of small farm conditions and application of new technologies to them so

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as to develop an appropriate research methodology to study farming systems and draw up, at the same time, a list of criteria for the description and classification of farming systems in semi-arid Africa.

- b) Formulation of strategies to develop and implement small farm technology.
- c) Formulation of recommendations on the priorities of physical research.
- d) The design, organization and analysis of farmer trials and studies.
- e) Training national researchers and technicians in host countries in farming systems.

Since our farmers already have rich agricultural production tradition based on several millenia of experience, what we should do is to innovate through new techniques that can be easily assimilated and adapted by them. In fact, we should simply help farmers improve their experience and practices taking into account new constraints. All of us are aware that unless the people are convinced of the quality of a variety and accept it, our efforts will fail. The same holds true for farming systems. We should absolutely take into account field realities as well as the habits and reactions of the target human environment.

I count on all of our researchers and honourable guests here to elucidate these points on which I have touched. The various organizations whose support we have always enjoyed and who are with us here once more today will contribute by their rich experience to the expected success of this workshop.

Honourable Delegates and Dear Guests, I am convinced that you will find adequate solutions to the various problems enumerated with a view to achieving, before the year 2000, self-sufficiency in food in Africa.

Thank you.

O P E N I N G A D D R E S S

By:

A. H. ABDEL RAZIK
ASSISTANT EXECUTIVE SECRETARY
& OFFICER-IN-CHARGE OF OAU/STRC

Your Excellency Mr Jacques DIOUF, Secretary of State for
Scientific Technical and Research,
Excellencies,
Honourable Delegates and Observers,
Ladies and Gentlemen,

It is a pleasure and an honour for me to be here on behalf of the Secretary-General of the Organization of African Unity (OAU) Mr Edem Kodjo and on behalf of the Scientific, Technical and Research Commission of the Organization of African Unity (OAU/STRC). I wish to welcome all the delegates and observers assembled here participating in the first OAU/STRC Workshop on Farming Systems. I will like to express my profound thanks to the Government of the Republic of Senegal and the Local Organizing Committee who have co-operated effectively with the OAU in organizing this meeting.

Your Excellencies, I would like to give you the background information about the Semi-Arid Food Grain Research and Development Project (SAFGRAD) JP 31. The OAU/STRC convened a meeting in January, 1976 of all representatives of Member States in the Semi-Arid Region of Africa in Ouagadougou to see how to develop food grain research. At this meeting, 14 African countries participated with 9 representatives from International Agencies, the West African Economic Community and the United States Agency for International Development, (USAID), the British Ministry of Overseas

.../...

Development (ODM), the Ford Foundation (FF), the French Aid and Co-operation (FAC), European Development Fund (EDF) and the International Institute of Tropical Agriculture (IITA).

This meeting decided to begin work on a comprehensive programme to replace the first OAU/STRC cereals project JP 26 which dealt with staple food crops in West Africa. The OAU/STRC SAFGRAD Joint Project 31 was proposed. This project concentrates on cereals and legume crops with emphasis on: International and National Research Organizations. A survey was carried out to identify these institutes on the national and regional levels. Accelerated Crop Production Officers (ACPOs) were to be posted to all participating countries and OAU/STRC began to co-ordinate all these activities.

The objectives of this Joint Project is to develop and improve cereal varieties (Sorghum, Millet, Maize) and grain legumes (Cowpeas, Groundnut). It is also to study the cultural practices which are compatible with small farming systems and to promote their adaptation in participating countries. This Project supports crop and soil scientists, farming system researchers to test new varieties and technologies under small farm conditions.

We have chosen three Regional Centres in agronomic research in the semi-arid zone of Africa namely:

Institute of Agricultural Research (IAR) at

Ahmadu Bello University in Zaria, Nigeria;

National Agricultural Research Centre (CNRA)

Bambey, Senegal;

Kamboinse/Saria Research Station in Upper Volta

These are besides the International Institute of Tropical Agriculture (IITA) in Ibadan, Nigeria.

.../...

As the main regional centres working under this project, these Centres have been provided with research personnel (Maize Breeders, Soil Fertility Agronomists, Production Agronomists and Entomologists). Additional facilities have also been provided for seed drying as well as refrigerated rooms.

Purdue University in the United States has also, under agreement, provided Rural Economists, Agronomists and Sociologists and Anthropologists to form SAFGRAD's Farming Systems Unit.

The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) has co-operated in this project by giving more Agronomists, Specialists in Soil Management and Soil Fertility and Production Agronomists.

There is, under this programme, a quarterly Newsletter which circulates valuable information and provides a forum for the exchange of experience among research workers apart from the progress reports which are made from time to time.

This Project had two meetings in 1979, two meetings in 1980 and will be having 4 meetings in 1981. This workshop is to focus attention on the economic, social and agronomic evaluation of new production techniques suitable for small farm conditions in the Semi-Arid Zones of Africa.

On the agenda of this meeting you are to discuss the proposed long term objectives of SAFGRAD Farming Systems under small and large farming conditions. You will have the opportunity to propose a framework for Inter-African Cooperation in Farming Systems and improvements in the quality of farming data. You will also discuss training at national and regional levels.

The Executive Secretariat of OAU/STRC will be delighted to have the results of your discussions and your recommendations with the hope of finding radical solutions to our problems and improving and developing our production in agriculture.

.../...

We hope that you the Scientists and Technologists of Africa will give us an effective plan of action and measures for implementing it. The OAU is willing to implement your recommendations on the national and on the regional levels.

I wish to extend our thanks to IRAT, FAO, IDRC, ICRISAT, INTSORMIL, ORSTOM, UNIDO, AAASA, GTZ, IITA and ODM who have always co-operated with us, given their assistance and kept continued interest in our work.

Once again I wish to thank H.E. the President, the Government and the people of Senegal for hosting this meeting and particularly our thanks goes to H.E. Dr. Jacques Diouf, the Secretary of State for Scientific Research, for finding time to officially open this meeting. I also thank the Organizing Committee for all the efforts they have made.

Long Live African Unity.

Thank You.

SPEECH DELIVERED BY HIS EXCELLENCY JACQUES DIOUF

SENEGALESE SECRETARY OF STATE FOR SCIENTIFIC

AND TECHNICAL RESEARCH

Excellencies,
Assistant Executive Secretary of the Scientific,
Technical and Research Commission of the OAU,
International Coordinator of OAU/STRC SAFGRAD,
Honourable Delegates and Guests,
Ladies and Gentlemen,

On behalf of the Government of Senegal, I have the honour to welcome you delegates from friendly countries who have accepted to come to Dakar to participate in the First Workshop organized by the Scientific, Technical and Research Commission of the OAU on Farming Systems.

This meeting is of singular importance. I say this because it is being held at a time when countries of the Sahel continue to be severely affected by more than a decade of disastrous rainfall conditions.

The subsequent decrease in food production has been aggravated by the effects of the global energy crisis on our balance of payments.

It is therefore in the right vein that our countries should, in a concerted manner, exchange information, experience and make trials to take up the challenge of both nature and an unjust international economic exchange.

The idea of cooperation is the very basis of OAU's Joint Project 31 SAFGRAD set up in 1976 in Ouagadougou and whose workshop we are attending today.

.../...

Indeed, Benin, Cameroon, Cape Verde, Central African Republic, Ivory Coast, Ethiopia, Gambia, Guinea, Upper Volta, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Sudan, Chad and Togo have decided to join forces with the following cooperating countries: United States, France, Federal Germany, Great Britain, Canada and international organizations to improve cereal and grain legume production in the region. Since then, other African countries have enlarged this fraternal circle.

Within the framework of this project, we are not only seeking to create high-yielding varieties, to determine appropriate fertilizer, pesticide and herbicide formulae but above all to use such in an optimum integrated production system which will be economically profitable and socially acceptable.

Through activities carried out at the CNRA at Bambey and at the Thyssé-Kaymor and Koumbidia experimental units, the Government of Senegal has acquired experience in the research fields enumerated above. It is wholly committed to this cooperative effort and will therefore endeavour to make worthwhile contribution to the implementation of the Project.

The current national agricultural research reorganization for instance stresses farming systems, and will be extended to cover other regions in Senegal.

There will be three sorts of trials and experiments:

- Study of genetic material, inputs and agricultural material, under controlled environments, at the research station;
- Experiments, under natural conditions, of agricultural factors in regionalized production systems.
- Tests on the technical and socio-economic acceptability of extension topics under farmer conditions.

.../...

In this manner, research will benefit from permanent contact with the physical, biological and human realities in the rural areas and improve its efficiency by proposing practical solutions to the real problems of the rural sector.

The development of adapted farming systems is a fundamental element in defining technology necessary for agricultural development. It is an important stage for the introduction of modern innovations into the traditional environment.

Senegal therefore avails itself of this opportunity to congratulate the Scientific, Technical and Research Commission of OAU and SAFGRAD on the efforts made to display African farming systems through this seminar.

As part of the reorganization of research, ISRA for its part, plans to organize a similar concertation on the study of the various combinations of agricultural production factors in Senegal.

I am convinced that honourable delegates here present to participate in this important gathering on African agriculture, together with their colleagues from cooperating countries and organizations, will be able to find adequate solutions to ensure increase in food production in our countries.

Your rich technical experience and moral commitment in the fight against hunger in the world guarantee the success of this OAU meeting.

Honourable Delegates and Guests,

Ladies and Gentlemen,

I declare open the First OAU/STRC Workshop on Farming Systems and wish you success in your proceedings.

Thank you.

F I N A L R E P O R T

I OPENING CEREMONY

The First Workshop on Farming Systems organized by the Scientific, Technical and Research Commission of the Organization of African Unity (OAU/STRC) under the Joint Project No 31 Semi-Arid Food Grain Research and Development (SAFGRAD) was held from 12 to 15 January 1981 at the Meridien N'GOR Hotel, Dakar, Senegal.

The introductory address of Mr Akadiri-Soumaila, International Coordinator, OAU/STRC JP 31 SAFGRAD, was followed by the address of Mr A.H.A. Razik, Assistant Executive Secretary in charge of OAU/STRC. The opening address itself was delivered by His Excellency Jacques Diouf, Senegalese Secretary of State for Scientific and Technical Research.

II PARTICIPATION

The meeting was attended by representatives from 16 JP 31 SAFGRAD member countries, 17 donor or cooperating organizations and a number of American and African Universities (see appended list). Nine (9) countries were absent: Cameroon, Chad, Cape Verde, Somalia, Sudan, Ethiopia, Tanzania, Ghana, Kenya.

III PROCEEDINGS

After the opening ceremony, participants elected the following officers:

Chairman: Mr Sitapha Diatta, Vice-Chairman: Mr Sesay. Rapporteur: Prof. Adegboye.

The Secretariat was composed of:

- Mr A.H.A. Razik
Assistant Executive Secretary and
Officer-In-Charge
OAU/STRC
PMB 2359
Lagos, Nigeria

.../...

- Dr M.A. Rasheed
Director
OAU/STRC/BIS
B.P. 1352
Bangui, Central African Republic

- Mr Akadiri-Soumaila K.O.
International Coordinator
OAU/STRC JP 31 SAFGRAD
B.P. 1783
Ouagadougou, Upper Volta

IV ADOPTION OF PROGRAMME

Delegates adopted the programme as presented with slight modifications due to the absence of some member countries and organizations. FAO replaced UNIDO and ISRA's numerous specialists took the place of the absentee countries. The following topics were dealt with:

A) FOOD CROP RESEARCH STRUCTURE

Chairman: Mr Samba Dieng

Rapporteur: Dr Paul Christensen

After the International Coordinator presentation of SAFGRAD and distribution of documents relative to the Project, the cooperating international research organizations and institute identified their various research set-ups and how they operate in Africa.

B) NATIONAL FARMING SYSTEMS RESEARCH

SESSION I

Chairman: Mr Nicou

Rapporteur: Mr Claude Charreau

SESSION II

Chairman: Mr Akle Jonas

Rapporteur: Mr Fillonneau

During these two sessions, delegates reported an farming systems research in their different countries and outlined their future plans within the framework of JP 31 SAFGRAD.

.../...

C) FARMING SYSTEMS RESEARCH BY INTERNATIONAL ORGANIZATIONS

Chairman: Dr Bill Morris

Rapporteur: Mr Zana J.L. Sanogo

The following international organizations took turns, after SAFGRAD's Farming Systems Unit Researches, and gave an account of their farming systems research activities: ICRISAT, IRAT, IITA, ORSTOM, IDRC, INTSORMIL, AAASA, FAO.

D) REPORTS ON CROPPING CONDITIONS AND THE APPLICATION OF TECHNOLOGY

Chairman: Prof. Adegboye

Rapporteur: Mr J. McIntire

Specialists from certain international organizations dealt with the difficult problem of technology application under African farmer cropping conditions.

E) INTER-AFRICAN COOPERATION IN RESPECT OF FARMING SYSTEMS RESEARCH

Chairman: Mr L.J. Marenah

Rapporteur: Dr Rasheed

Three groups of researches considered the following topics:

- 1 Animal traction and mechanization
- 2 Soil fertility
- 3 Farming systems and intercropping.

This session enabled the different researches to exchange their own experiences and identify the areas of effective cooperation at all levels to achieve the objectives of JP 31 SAFGRAD.

F) FARMING SYSTEMS RESEARCH METHODOLOGY

DATA COLLECTION AND ANALYSIS

Chairman: Mr Madicke Niang

Rapporteur: Dr R. Swanson

During the last session, discussions were held among specialists to better identify the general consensus felt during the meeting and to work out appropriate solutions to the various problems brought up.

Finally, the following Editorial Committee wrote up the recommendations of the workshop and presented its work:

EDITORIAL COMMITTEE

Rapporteur: Prof. Adegboye

Members: Dr Paul Christensen

Mr Claude Charreau

Mr Fillonneau

Mr Zana J.L. Sanogo

Mr J. McIntire

Dr Rasheed

Dr Swanson

Mr Galiba

Mr Saihou Tall.

R E C O M M E N D A T I O N S

Vote of Thanks to the Host Government:

The OAU/STRC JP 31 SAFGRAD First Farming Systems Workshop wishes to express its sincere thanks to the Government of Senegal, the State Secretariat for Scientific and Technical Research and to the People of Senegal for the excellent facilities provided for the meeting in Dakar and for the hospitality and friendliness shown to the delegates.

Vote of Thanks to the Donor Agencies:

The workshop also wishes to express its gratitude to the Donor Agencies which have supported the SAFGRAD Project, especially the United States Agency for International Development for their strong financial and technical support.

RECOMMENDATION I:

Representation by Member Countries:

SAFGRAD recommends that Member States should kindly be represented at future meetings on farming systems by researchers in the field.

RECOMMENDATION II:

Animal Traction and Mechanization:

SAFGRAD, possibly with the Institute of the Sahel (Bamako), should provide a network of information with the existing institutions in the SAFGRAD countries on information of animal traction. This would include an exchange on the technology of animal traction and other innovations that affect human labour productivity.

.../...

RECOMMENDATION III:

Soil Fertility:

- a) That national research on the response of rock phosphate fertilizer on farmers' fields be increased;
- b) That the results of on farmers field trials be exchanged among the organizations conducting them;
- c) That the economics of Rock Phosphate use be discussed at the next OAU/STRC SAFGRAD Conference;
- d) That the IFDC continue to sponsor research on low cost means of increasing the solubility of R.P.

Studies should include:

- the quantity of residues in the fields;
- the quantities of manure and other organic matter generated in the household;
- the utilization of the organic matter including:
 - a) commercialization;
 - b) distribution on fields;
 - c) others.

The results of studies of this sort should form a portion of a subsequent SAFGRAD farming systems conference although next year may be too soon to allow completion of the studies.

RECOMMENDATION IV

Farming Systems and Intercropping

(a) That researchers should define, in their respective countries, the various agricultural situations, In so doing, the following points should be taken into consideration:

- Climate,
- Soil,

.../...

- socio-economic criteria
- population distribution, etc

To this end, the document created by the FSU/SAFGRAD team can be used as the basis of study.

(b) That inquiries should be made on the structure of traditional farms.

these studies should deal with:

- farm size,
- the number of active workers per farm,
- working time,
- soil quality,
- the use of resources etc.

(c) That the member countries should publish synthesis of their works on production systems, particularly their methodology, in the information letter.

The commission recommends that documents which cannot be published in the information letter should be sent to SAFGRAD, which will ensure their redistribution.

(d) That SAFGRAD should organize support missions in the countries which solicit it with a view to harmonizing the methodology used.

(e) That SAFGRAD should organize study trips to allow scientists to learn about other countries accomplishment. These exchanges can be done either as a short trip or as a long-term stay in the country.

(f) That governments should make known to SAFGRAD the organizations or institutes engaged in studies of production systems.

(g) To study the effect of rotation on intercropping.

.../...

(h) To study also the integration of intercropping with animal traction.

RECOMMENDATION V

Regional Cooperation

That all Member States of OAU co-operating with SAFGRAD JP 31 should expand their economic and technical co-operation in Farming Systems by:

(a) Exchange of technical manpower

(b) Joint development programmes on regional and sub-regional levels,

(c) There must be yearly meetings to specify and establish yearly

goals for the project JP 31 and for agricultural production and establish effective national machinery to work in co-operation with the co-ordinating unit of OAU/STRC to monitor progress towards the self-sufficiency in production. This can be done by also co-operating with the FAO, ICRISAT and the regional and multinational institutions co-operating in this project.

(d) It is necessary to reappraise the on going project JP 31 to ensure that it is really contributing to the realization of its objectives.

- High priority should be given to building up national capabilities in the specific areas of plant breeding, plant pathology, plant physiology and entomology etc.

- It is essential to expand and begin programmes in this field on regional and sub-regional levels and organize seminars and workshops.

Research finding to be made available with minimum delay from specified institutions (IITA, ORSTOM, IRA, ISRA, etc) - this must be organized by OAU/STRC JP 31 SAFGRAD with the following objectives:-

- To establish closer links between research and extension services, through SAFGRAD ACPO'S;

- To spread existing knowledge while going on with the acquisition of new knowledge.

1981

FIRST WORKSHOP ON FARMING SYSTEMS ORGANIZED BY THE SCIENTIFIC, TECHNICAL AND RESEARCH COMMISSION OF THE ORGANIZATION OF AFRICAN UNITY (OAU/STRC) UNDER JP 31 SAFGRAD

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