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SCIENTIFIC, TECHNICAL AND RESEARCH COMMISSION
(OAU/STRC)

THE SEMI-ARID FOOD GRAIN RESEARCH
AND DEVELOPMENT PROJECT
JP-31 SAFGRAD

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PROGRESS REPORT
ON SAFGRAD ACTIVITIES
(OCTOBER 1983 - MARCH 1985)

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FOR THE 1985 OAU COUNCIL OF MINISTERS

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The Semi-Arid Food Grain Research and Development (SAFGRAD) Project came into being and became operational in 1977, after the successful completion of a similar project Major Cereals Joint Project 26 (JP-26) - developed in West Africa between the United States Agency for International Development (USAID) and the Scientific, Technical and Research Commission of the Organization of African Unity (OAU/STRC). Its objective was to coordinate, on a regional basis, research on five food grain crops (sorghum, maize, millet, cowpea and groundnuts) among SAFGRAD member states of which there are currently 25. The coordination was deemed necessary since many of the member states' national research programmes were still at a nascent stage of development. The member states were expected to take full advantage of SAFGRAD's research results to apply them in their respective countries to increase food production.

To accomplish the above objective, three regional research centres were identified, in the following SAFGRAD member countries : Nigeria (Institute of Agricultural Research, Samaru), Senegal (Centre National de la Recherche Agronomique, Bambey) and Upper Volta now, Burkina Faso (Kamboinse Station). At the national level, support was to be given to member countries through their national research programmes and special SAFGRAD accelerated crop production officers (ACPOs) who would assist to strengthen links between research and extension.

Scientific and Technical assistance to SAFGRAD was to be provided by two International Agricultural Research Centres, namely: the International Institute of Tropical Agriculture (IITA) in Ibadan Nigeria, for maize and cowpea improvement and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in Hyderabad, India, for sorghum, millet and groundnut improvement. A third cooperator, Purdue University (an American University) was to provide scientific and technical assistance in farming systems research (FSR).

Management of SAFGRAD is achieved through the OAU/STRC Coordination Office (in Ouagadougou) which receives and implements recommendations from the Consultative and Technical Advisory

committees. More details concerning the two committees are presented in section 5.2)

This report covers the main activities as well as achievements of SAFGRAD during the period from October 1983 to March 1985. The first phase (end of USAID funding) was envisaged to end on 31 March 1985. It has now been extended for an additional year to provide adequate time for planning SAFGRAD II.

2.0 MEMBER STATES OF SAFGRAD

Originally SAFGRAD was designed for 18 members states of the OAU, namely: Benin, Cameroon, Cape Verde, Central African Republic, Chad, Ethiopia, Gambia, Ghana, Guinea, Ivory Coast, Mali, Mauritania, Niger, Nigeria, Senegal, Sudan, Togo and Upper Volta (now Burkina Faso). Although more countries applied for membership, only seven more were admitted on the basis of the geographic mandate of SAFGRAD - that is, countries in sub-Saharan Africa affected by semi-arid conditions. The seven additional countries include Botswana, Guinea Bissau, Kenya, Sierra Leone, Somalia, Tanzania and Zambia.

During the last SAFGRAD Consultative Committee Meeting, the membership of Uganda was recommended for Approval by the Council of Ministers. If this happens, then SAFGRAD membership will increase to 26.

3.0 FUNDING OF SAFGRAD

During the period from October 1983 to March, the OAU/STRC SAFGRAD Project has continued to benefit from the financial and technical support of its multi-national donors, namely : USAID, the French Aid and Cooperation Fund (FAC) and the International Fund for Agricultural Development (IFAD). The most significant development during the above period was the substantial contribution of US \$ 40,000.00 by the Organization of African Unity itself towards research coordination activities of SAFGRAD for 1982/83 and 1983/84.

The United States Government (through USAID), the original donor, has continued to be the principal donor to SAFGRAD, contributing about US \$ 3 million from October 1983 to March 1985. Of this amount, over US \$ 800,000.00 was for research coordination and the rest for research and ACPO activities in its regional stations and member countries.

The second donor, IFAD has released grants totalling US \$ 700,000.00 to SAFGRAD (since 1983) to assist in the development of national Farming Systems Research programmes of three member countries. The programme has already been started in Burkina Faso and Benin; it is expected to start soon in Cameroon. Furthermore, IFAD has pledged a grant of one million US dollars for each of the three years 1985-87 as FSR assistance to the three countries indicated above.

A grant of 300,000 French Francs (about US \$ 30,000.00) was made to SAFGRAD in 1984 to support the ACPO programme in Togo. The French Government (through FAC) has been supporting this programme since 1980 with a total grant, so far, of 1,650,000 French Francs (US \$ 165,000.00).

Considering the interesting research results achieved by SAFGRAD and the reactivation of its management mechanism, a concerted effort is being made by OAU/STRC for additional donors to support the research activities of SAFGRAD.

4.0 MAJOR ACTIVITIES OF SAFGRAD

4.1 Coordination Role of SAFGRAD

The coordination of SAFGRAD activities is carried out by the OAU/STRC Coordination Office staff in Ouagadougou, Burkina Faso. These include five senior officers (four OAU/STRC and one USAID), three intermediate and 15 supporting staff. The Office does not undertake research but coordinates the research activities of SAFGRAD-funded scientists in its regional stations and those of the Accelerated Crop Production Officers (see staff list) and ensures that results obtained are disseminated through conferences, workshops and publications to national programmes of member countries.

The Coordination Office plans and organizes meetings of the Technical Advisory Committee and the Consultative Committee and implements recommendations resulting from such meetings. In an effort to strengthen the capabilities of national programmes, it endeavours to develop a balanced training programme for promising research staff. Through SAFGRAD networks, the Office encourages the free flow of new ideas and technologies among researchers of SAFGRAD and those of national programmes.

The Coordination Office endeavours to widen international donor participation through marketing of well defined sub-programmes which are relevant to its mandate. (For specific roles of the Coordination Office, see Section 5.1).

4.2 Farming Systems Research

A Farming Systems Research Programme was developed within SAFGRAD to evaluate and package technologies obtained through research on food grains (cowpea, maize, millet, sorghum and groundnuts). Methodologies developed by this programme are being introduced into the national programmes of several SAFGRAD member countries through workshops, resident training and direct technical assistance by OAU/STRC. During the last five years, FSR was suppor-

ted through USAID. Through socio-economic base-line surveys and on-farm adaptative trials, the major global constraints of food grain production have been identified.

The comprehensive village-level farm-adaptive trials and collection of a broad variety of social and economic data have led to a better understanding of traditional food production systems and adaptation of new technologies. Currently, the International Fund for Agricultural Development (IFAD) is supporting OAU/STRC FSR activities. In each of the SAFGRAD member countries where FSR has been initiated, integrated multidisciplinary research teams are organized to resolve some of the constraints of food production in specific geographic locations in each country.

4.3 The Accelerated Crop Production Officers' Programme

Despite the high yields and other good results often cited by many agricultural research stations, the poor transfer of new technologies to farmers has still continued to be one of the major constraints in increasing food production in many African countries. In an attempt to improve the situation, SAFGRAD assigned one officer to each of five countries to strengthen the linkages between national research and extension. Each Accelerated Crop Production Officer (ACPO) tests new varieties and technologies from SAFGRAD regional stations and the national programme of a given country directly on farmers' farms in that country. Where a new variety or technology is tested and accepted by one farmer, its adoption by neighbouring farmers has been without much difficulty. Once accepted, the new technology can thus be taken over by the extension service for delivery to other farmers. Through such on-farm testing, the ACPO obtains feedback from the farmer to the national and SAFGRAD scientists. The evolution of the programme has been found to differ from one country to another due to the different levels of national research and extension systems, capabilities and priorities.

The ACPO programme has been one of the most successful activities of SAFGRAD. Numerous requests have been made to have the

programme expanded into their countries which presently do not have ACPOs. Countries presently with ACPO programmes include Burkina Faso, Cameroon, Mali, Senegal and Togo.

4.4 Training

Training has been an important component of SAFGRAD, aimed at strengthening the capabilities of national programmes of member states. It consists of short-term training lasting for less than one year, and long-term training for higher university qualifications.

Short-term training usually involves improvement of certain skills of national staff from member countries. These include laboratory skills, crop production and other field skills which usually last during one cropping season. Such training is often done by SAFGRAD at its regional station in Kamboinse (Burkina Faso) or by the cooperating institutes : by IITA at Ibadan (Nigeria) or by ICRISAT in Hyderabad (India) or at its new Sahelian Centre in Niamey (Niger) when it will soon be completed.

Long-term training involves the acquisition of higher university qualifications—Masters or Doctorate degrees. Candidates for such training, so far, have been trained in African and overseas universities. Although many of them return to their countries at the end of their studies, a few have been observed to stay away in other countries.

The recommendations of candidates for training through SAFGRAD are usually made by various services within a given member state. Whatever the service, the host country must give its approval before a candidate is accepted by SAFGRAD for training. While in training, SAFGRAD endeavours to keep up with each candidate's progress so that his training is relevant to the needs of his country.

5.0 SOME IMPORTANT LANDMARKS OF SAFGRAD

Between October 1983 and March 1985 (after the reactivation of the management mechanism of SAFGRAD), some important events have taken place which have shaped or will continue to shape the course of development of SAFGRAD. These include :

5.1 Strengthening of the Coordination Office

Prior to 1983, SAFGRAD was managed primarily by the International Coordinator who was assisted only by the USAID Project Manager. In March 1982, a Finance Officer was added to this two-man team which was assisted by about 15 other junior personnel.

The functions of the Coordination Office include :

1. Planning and organizing TAC and CC meetings;
2. Management of project funds;
3. Research coordination with cooperating institutes (IITA, ICRISAT, etc), and national programmes;
4. Ensuring technology transfer through the ACPO programme;
5. Organizing feedback and liaison among researchers through workshops, conferences and circulation of publications;
6. Coordinating the SAFGRAD training programme;
7. Maintaining regular contacts with member states; and
8. Widening international donor participation in SAFGRAD.

In order to improve efficiency and ensure a balanced implementation of SAFGRAD, a Director of Research was added to the Coordination Office in September 1983 and a Financial Controller and a new Accountant in January 1984. To these, the evaluation team recommended (in their report of September 1984) the addition of a Director of Training and Extension and a Planning and Organization Officer.

5.2 Reactivation of the Management Mechanism of SAFGRAD

After the recruitment of a new International Coordinator in May 1983, the Director of Research in September and the addition of two Finance Officers (Financial Controller and Accountant) in January 1984, the coordination mechanism of SAFGRAD was reactivated through the Consultative Committee (CC) and the Technical Advisory Committee (TAC).

The CC is responsible for policy, planning and overall project implementation guidance while the TAC reviews the technical aspects of research and advises the CC on research policy matters. More specifically, the CC has as its role the following :

1. To identify, review and make recommendations on policy matters;
2. To review management, organizational or technical problems and make recommendations to donors, implementors and participating cooperating countries to follow in seeking solutions to problems;
3. To facilitate project implementation and assure sound administrative management and technical practices; and
4. To serve as a receiving and reviewing body for questions or suggestions from any participating or cooperative body.

As its functions, the TAC carries out the following :

1. To review annual research workplans and submit recommendations to CC;
2. To review other research workplans/documentation related to SAFGRAD in the region, and submit recommendations to the CC on approaches for improvement and coordination of food crop research;
3. To review annual ACPO workplans and submit recommendations to CC, national officers and ACPOs; and
4. Review Farming Systems Research (FSR) results and advise the CC on coordination and other approaches to FSR.

Membership of both CC and TAC is made up of representatives of SAFGRAD member countries, donor agencies and the International research cooperators (ICRISAT and IITA). The donors of SAFGRAD now include the International Fund for Agricultural Development (IFAD) which recently joined the United States Agency for International Development (USAID) and the French Aid and Cooperation Fund (FAC). The IFAD support is restricted to Farming Systems Research.

Customarily, the CC and TAC were expected to meet annually or more frequently if the need arose. Until October, 1983, the CC had only met once and the TAC twice since the inception of the SAFGRAD Project in 1977. Between October 1983 and March 1985, both committees have been reactivated. The CC has since met thrice (November 1983, April 1984 and November 1984) and the TAC twice (January 1984 and October 1984).

Resulting from meetings of the two committees are many recommendations for implementation by the OAU/STRC Coordination Office team.

5.3 IFAD-Funded Farming Systems Research Programme

With the phasing out at the end of the first phase of SAFGRAD of the Farming Systems Unit (FSU) assigned to Purdue University, this important component of SAFGRAD is being gradually replaced by a farming systems research programme funded by the International Fund for Agricultural Development (IFAD).

Using some of the experiences and achievements of FSU, the IFAD-funded SAFGRAD FSR is structured with a focus on strengthening national FSR programmes of three member states. Its main focus is to integrate crop and animal production systems and look for efficient ways of achieving long range soil improvement. It is expected that this programme will serve as a model which can be adopted by other member states of SAFGRAD. So far, FSR programmes have been started in Burkina Faso and in Benin; arrangements are in progress to include a third country : Cameroon. The programme is monitored by a Project Management Committee which submits its programme to TAC for study and recommendation to the CC.

5.4 Evaluation of SAFGRAD

A mid-point evaluation of SAFGRAD was conducted in July 1981. As the first phase of the Project was expected to end in March 1985, a final major evaluation was considered necessary in order to determine the eventual course of SAFGRAD. This took place in February 1984 by an eight-member USAID team which interviewed SAFGRAD scientists, donor agency staff, government officials and national scientists in Burkina Faso and several member states as well as OAU/STRC staff. The team looked into the different research components of SAFGRAD, training, technology transfer, SAFGRAD organization, etc..

Based on the anticipated extension of SAFGRAD, the team recommended, among other things, vigorous support for the ACPO programme, strengthening of existing research programmes and creation of an ACPO and FSR networks within the Semi-Arid regions of Africa, and strengthening the OAU/STRC Coordination Office of SAFGRAD.

At the time of the evaluation, the IFAD-Supported FSR component was just being launched. Although the team was funded fully by USAID, the entire SAFGRAD project was evaluated.

5.5 The ACPO Field-Day and Workshop in Bamako, Mali

The ACPO programme, as already stated, serves as a link between regional and national research systems and between national research and extension services through on-farm testing of new varieties and technologies. Of all the ACPO programmes presently in operation by SAFGRAD in five member states, that of Mali has been very successful.

During the 1984 cropping season; the ACPO/Mali carried out 226 on-farm trials-covering almost two-thirds of the country. The tests involved maize, cowpea, millet, sorghum and groundnuts. The government of Mali gave full support to the programme by pro-

viding most of the necessary inputs, for example : payment of salaries of the ACPO and other supporting staff, provision of office space and extension field assistance.

Realizing the importance of government policy and other important factors on food production, a special field-day and workshop were organized to :

- a. improve linkages between research and extension in Mali and among the national programmes of other member states of SAFGRAD;
- b. strengthen the ACPO network among member states; and
- c. evaluate, standardize and improve the ACPO programme through exchange of experiences among the various participants.

The first day was devoted to visiting several on-farm trials. Participants included Mali government staff, representatives of : the cooperating institutes (ICRISAT, IITA and Purdue University), SAFGRAD Consultative Committee, USAID, Radio Mali, SAFGRAD Coordination Office, researchers from the national programmes of Burkina Faso, Ghana, Mali and Nigeria and other ACPOs. In addition to the farmers whose fields were being visited, other farmers in the same neighbourhood also joined the group.

During the field trip, there was very fruitful interaction between the farmers and other participants. Farmers freely expressed their opinions on some of the new crop varieties, their difficulties and aspirations - most of which was recorded and broadcast later by Radio Mali.

The second day was devoted to discussion of the activities of the field-day and some special themes relating to the ACPO programme as a whole. As a result, some recommendations were adopted to improve the ACPO/Mali programme in particular and other programmes in general. The Mali experience revealed the importance of frank dialogue among farmers, researchers, extension agents, donors and administrators. It was evident that the ACPO programme needs continuous enrichment with new themes and improved technolo-

gies in order to enhance their adoption by farmers.

5.6 Search for New Donors

The Coordination Office is currently engaged in expanding donor support for short and long-term research and development activities of SAFGRAD. Since the inception of SAFGRAD, USAID has been the lead donor. In February 1985, the Executive Secretary of OAU/STRC led a delegation (that included the International Coordinator and Director of Research of SAFGRAD) to Washington D.C to discuss long-term support for the SAFGRAD Master Plan that is being developed by OAU/STRC. The outline of the plan was discussed with various technical committees and administrators of USAID and the U.S Department of Agriculture.

The SAFGRAD programme of activities was also discussed with other agencies in Washington, D.C; such as the World Bank, the International Agricultural Development Service, UNDP and its affiliated agencies: the Division for Technical Cooperation among Developing countries, the Division for Global and Inter-Regional Programmes and the Regional Bureau for Africa.

Furthermore, the Executive Secretary of OAU/STRC discussed the outline of the SAFGRAD Master Plan with members of the Cooperation for Development in Africa (CDA), an informal association of donors including Belgium, Canada, France, Italy, West Germany, the United Kingdom and the United States. The CDA members were interested in using the OAU/STRC-SAFGRAD mechanism for accelerating the strengthening of agricultural research and transfer of technology in the Semi-Arid regions of sub-Saharan Africa. Through OAU/STRC, SAFGRAD short and long-term plans are scheduled for discussion with the above donors in the near future.

5.7 Preparation for SAFGRAD II.

The first phase of the USAID component of SAFGRAD was expected to end in March 1985. Due to other factors as well as favourable recommendations by the USAID project evaluation team,

a second phase was approved and the first one extended to 31 March, 1986.

It is envisaged that in the second phase of SAFGRAD, some conceptual changes and emphasis will be introduced, such as :

- . a clear role for SAFGRAD and its various components,
- . greater emphasis on technology transfer to farmers in order to speed up self-sufficiency in food production within the SAFGRAD geographic zone,
- . more emphasis on soil and water management in order to maximize production in areas with unreliable rainfall

In order to prepare for SAFGRAD II, a team of consultants is expected in Ouagadougou in July, 1985 to draw up a phase II plan in consultation with OAU/STRC, member states and those international institutes which have cooperated very closely with SAFGRAD during its first phase.

6.0 MAJOR ACHIEVEMENTS OF SAFGRAD.

Although this report covers the period between October 1983 and March 1985, most of the achievements which are presented in this section were developed during a longer period before November 1983. The major achievements of SAFGRAD include the following:

6.1. Coordination of SAFGRAD Activities.

The OAU umbrella under which SAFGRAD operates has been a great asset to SAFGRAD's main function of coordinating research and other activities within the different geographic regions of Africa, particularly between Anglophone and Francophone countries which share together many common problems.

SAFGRAD's research collaboration with the International Agricultural Research Centres (IARC) - ICRISAT and IITA - together with its function of linking regional research to national research programmes of its member states, provides a unique research focus for generating appropriate crop production technologies in the semi-arid regions of sub-Saharan Africa.

During the last five years, SAFGRAD has successfully promoted a regional network of food grain research involving its 25 member countries. It has sponsored 14 workshops attended by more than 750 leading African and other international crop breeders, agronomists, agricultural economists, etc, who now have the opportunity of exchanging valuable ideas and information on problems of mutual interest. Each year, results of crop variety trials are discussed during regional meetings where some varieties are selected and passed for further screening and new programmes discussed for future implementation.

Furthermore, annual monitoring tours are organized for small groups of scientists (8-12) to see on-going variety trials and other relevant research activities in 3-5 selected SAFGRAD member countries. The monitoring tours provide unique opportunities for more intimate acquaintances while enhancing a fraternal spirit among national scientists. The tours as well as regional meetings naturally encourage high quality scientific research since the work of the national scientists is regularly evaluated by their colleagues from the IARCs and other countries. Such reviews otherwise occur only rarely in Africa, due to budget limitations and other problems affecting many national programmes.

6.2. Generation of new Technologies.

The semi-arid region within which SAFGRAD operates in Africa is a zone characterized by very harsh conditions: very high temperatures, poor soils and frequent droughts. Not only are the rainy seasons becoming shorter but the rains themselves have become more and more unpredictable, thereby increasing the risk factors to which the local farmers have been accustomed in the past. Therefore, the time period required for the development of technological breakthroughs under such conditions should not be underestimated.

The general approach of SAFGRAD is aimed at improving local and developing new crop varieties (with acceptable consumer qualities) which are high-yielding, pest and disease resistant, which can fit into the changing environments of the semi-arid regions of its member states. At the same time, appropriate technologies are also developed in an effort to enhance increased food production. Some of the achievements from these approaches are summarized here below:

6.2.1. Maize/Cowpea Programme.

Maize.

The major thrust of maize improvement has been the development of early to medium-maturing varieties for use in the different ecological zones of semi-arid sub-Saharan Africa. These varieties have been released to several national programmes for further testing and use in different member states of SAFGRAD.

In collaboration with CIMMYT, and IITA, high quality protein maize (Pool-34 QPM) has been identified and already included in the regional testing programme. This will be very useful in those countries where maize is the main staple food. A methodology for identifying genetic characteristics of drought resistance has been developed and some progress made to identify varieties and maize populations comparatively more tolerant to drought.

Cowpea.

The grain, young leaves and green pods of this high-protein grain legume plant are generally consumed in many countries of sub-Saharan Africa. The rest of the plant is often used as livestock fodder during the long dry seasons.

A multiple, disease-resistant and high-yielding variety (KN-1) has been released and successfully evaluated in many countries. A drought and striga-resistant variety (SUVITA-2) has also been developed and

is presently in the pre-extension trials of several countries.

Many local cowpea varieties have been collected, evaluated and screened for extra early maturation under various farming systems in the region. Progress has also been made in defining and recommending appropriate cropping systems of cowpea and the other SAFGRAD mandate crops-maize, sorghum, and millet. Work is also in progress to develop integrated pest management control methods against pests which attack cowpea in storage.

6.2.2. Sorghum and Millet.

The Eastern Africa Sorghum and Millet Improvement Co-ordination unit, comprising 12 countries, has continued to enrich national programmes with improved sorghum germplasm from many sources. The annual workshops which have been held in Ethiopia, Rwanda, and Tanzania, respectively in addition to on-going regionally-oriented research, have stimulated, enlarged, and revitalized the disrupted research coordination activities of the former East African Community. During the last three years, the Eastern Africa Cooperative Regional Sorghum Trials have produced the following elite materials:

- a. Ten improved long-cycle sorghum lines for the high elevation zone of East Africa (above 1800m);
- b. Nine improved sorghum lines for the intermediate elevation zone (1500-1800m);
- c. Seventeen relatively high-yielding entries have been identified for the low altitude zone (less than 1500m); and

- d. For the very dry lowlands which are adversely affected by repeated cycles of drought, eleven short-cycle sorghum varieties have been developed.

The SAFRAD/ICRISAT sorghum and millet improvement programme in Samaru, Nigeria achieved the following results:

About 1000 lines of sorghum of tropical origin were selected and critically evaluated against pest and disease resistance and for suitability for planting across a wide range of environments. While several promising varieties were identified as tolerant to striga - a destructive weed which attacks millet, sorghum, maize, cowpea, etc... - and thereby reducing their yields, six improved sorghum varieties of Nigerian origin were evaluated in several SAFGRAD member states, also several millet and sorghum lines were screened for insect (stemborer and shootfly) resistance.

FRAMIDA and E35-1 are two most important ICRISAT varieties which have been tested in many SAFGRAD member countries.

6.2.3. Soil-Water Management Research.

SAFGRAD research on soil-water management has established that:

Tied-ridges reduce water and soil erosion losses and, at the same time, increase crop yields. Tied-ridges can be improved by placing mulch in their catchment basins;

Higher yields result from better surface water management, particularly when this measure is accompanied with improved varieties, fertilizer and more actual hours of labour; and

Animal traction as a source of draft power can be used to construct terraces, contour ridges, drainage ditches and many other water conveyance and storage structures for better soil-water management.

6.2.4. Farming Systems Research.

The primary goal of the Farming Systems Research was to identify technologies appropriate for the largely subsistence farmers of semi-arid West Africa.

The FSR studies focus on evaluating and putting together technologies which maximize the use of non-purchased inputs while still using minimal applications of purchased inputs.

While confirming most of the results of the soil-water management programme, the FSR group has shown that the combined effects of water retention, fertilizer application and animal traction are a good means of increasing farmers' yields. By putting all the component pieces together in a modelling analysis, substantial increases in household incomes have been recorded.

6.3. Transfer of Technology.

SAFGRAD, through its dynamic Accelerated Crop Production Officer (ACPO) programme, has been able to:

1. Provide appropriate linkages between national research and extension services;
2. Facilitate introduction of results from SAFGRAD regional trials to national programmes of member states;

3. Established on-farm testing as well as introduce farmer-managed trials which are conducted directly on the farmers' fields;
4. Introduce new crop varieties and technologies through national programmes to farmers;
5. Provide highly-valued on-the-job training for national counterparts of the ACPOs, (It would be recalled that three of the five ACPO programmes are managed by nationals of those countries);
6. Supply feedback information to both national and SAFGRAD regional research teams in order to render their research more relevant to current farmers' needs;
7. Make the ACPO programme an integral part of the national programme to which it is attached.

6.4. Establishment of Research Networks.

Since the past five years, the following three major networks have been established by SAFGRAD:

1. Maize/Cowpea.

The maize/cowpea network has been in operation since 1979. It now involves national research scientists from nearly all the member states of SAFGRAD. Benefits derived from this network include exchange of planting materials, experiences, publications, etc...

2. ACPO.

The network of the Accelerated Crop Production Officers presently involves mainly the five countries in which the programme operates. It will be expanded as the ACPO programme is extended into other member states.

3. Sorghum/Millet.

This network covers 12 countries in East and Southern Africa where sorghum and millet are grown. It involves regional trials, the results of which are discussed during an annual sorghum/millet workshop which is rotated annually from one participating country to another. The workshop has been so successful that North and South Yemen have joined, thus benefiting from the good research results and new technologies generated through the OAU/STRC networking mechanism. Plans are in progress to set up a similar network in West Africa.

6.5. Training.

As at 31 March 1985, SAFGRAD had succeeded in training about 30 scientists at higher degree (M.Sc. and Ph.D.) levels in various aspects of food grain research and production in the semi-arid regions of subSaharan Africa. The areas of training cover agronomy, plant breeding, agricultural economics, soil science, crop protection, plant nutrition and agricultural engineering.

With regard to short-term training involving a few weeks to six months, more than 80 candidates have participated in courses ranging from laboratory methodo-

logies to various aspects of field training. This category of training has been achieved partly directly by SAFGRAD and partly through the cooperating institutions - ICRISAT, IITA and Purdue University.

Although SAFGRAD training is only supplementary to other training channels utilized by each member country, the numbers mentioned above are still grossly inadequate to meet the needs of most SAFGRAD member states.

7.0 THE FUTURE OF SAFGRAD

The progress of SAFGRAD since its early beginnings in 1977 has been positive. SAFGRAD has focused its attention on alleviating constraints to food production in the semi-arid regions of sub-Saharan Africa. This effort should be continued. SAFGRAD will continue to strengthen the capabilities of national programmes, working in collaboration with the International Agricultural Research Centres and other cooperators, donor agencies and sub-regional research coordinating bodies in West, East and Southern Africa.

The preparation of a SAFGRAD Master Plan is currently in progress. A team of consultants is expected in Ouagadougou in Mid-May 1985 to identify future areas of research and development emphasis. The Master Plan study will reflect in greater details, the SAFGRAD philosophy, its goals and direction. This long-term plan (10-20 years) will be developed with the full participation of member country scientists and relevant research organizations.

Later in July 1985, a USAID project design team is expected to begin the preparation of a Phase II plan (for five years, beginning from April 1986) for the USAID-funded component of SAFGRAD. Thus the Master Plan of SAFGRAD will eventually comprise the different components which are being currently funded by USAID, FAC and IFAD as well as other components for which new donors will be solicited.

SAFGRAD INTERNATIONAL ADMINISTRATIVE
AND SCIENTIFIC STAFF*

Position	Name	Nationality	Cooperator	Donor	Location	Remarks
International Coordinator	J.P.MENYONGA	Cameroonian	DAU/STRC	USAID	Ouagadougou	Coordination Office
Director of Research	TAYE BEZUNEH	Ethiopian	"	IFAD	"	"
Financial Controller	E.A.ODONKOR	Ghanian	"	"	"	"
Accountant	E.A. ADANLETE	Togolese	"	USAID	"	"
Project Manager	A. FLEMING	American	PASA	"	"	"
Maize Agron. (Team Leader)	M. RODRIGUEZ	Colombian	IITA	"	Kamboinse	
Cowpea Agronomist	N. MULEBA	Zairean	"	"	"	
Cowpea Breeder	V.D AGGARWAL	Indian	"	IDRC/IITA	"	Works with SAFGRAD/IITA Team
Entomologist	J.B.SUH	Cameroonian	"	"	"	
Maize Breeder	A.O.DIALLO	Guinean	CIMMYT/IITA	USAID	"	
Sorghum/Millet/Coord.	B. GEBREKIDAN	Ethiopian	ICRISAT	"	Nairobi	For Eastern Africa
Millet/Sorghum Agron.	S.V.R.SHETTEY	Indian	"	"	Sameru, Nigeria	Till May 1984
Soil/Water Agronomist	E.R.PERRIER	American	"	"	Kamboinse	Till September 1984
Agronomist (Team Leader)	R.P.CANTRELL	"	Purdue Univ.	"	Ouagadougou	FSU : till January 1984
Agronomist (Team Leader)	H.W.OHM	"	"	"	"	FSU
Agricultural-Economist	J. NAGY	"	"	"	"	FSU
Agricultural-Economist	M.G.LANG	"	"	"	"	FSU : till April 1984
Agricultural-Economist	C. PARDI	"	"	"	"	FSU : till March 1984
Animal Prod. Specialist	KASSU YILALA	Ethiopian	Burkina Faso	IFAD	Kamboinse	Farming Systems Research
Soil Scientist	T. KIBREAB	"	"	"	"	"
Agronomist	B.J.NDUNGURU	Tanzanian	Benin	"	Ina, Benin	"
Agricultural Economist	D.S.NGAMBEKI	Ugandan	"	"	"	FSR (temporary posting)
ACPO	J.J.JOHNSON	American	Cameroon	USAID	Maroua,Cameroon	SAFGRAD-funded, but local

* Between October 1983 and 31 March 1985

Position	Name	Nationality	Cooperator	Donor	Location	Remarks
ACPO	LAMINE TRAORE	Malian	Mali	USAID	SOTUBA, Mali	} SAFGRAD-funded, but local staff salaries paid by the host governments
"	M. FALL	Senegalese	Senegal	"	Bambey, Senegal	
"	MOUSSA KABORE	Burkinabe	Burkina Faso	"	Kamboinse	
"	TOKY PAYARO	Togolese	Togo	FAC	Kara, Togo	

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Department of Rural Economy and Agriculture (DREA)

African Union Specialized Technical Office on Research and Development

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