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Semi-Arid Food Grain Research And Development
Recherche et Développement des Cultures Vivrières dans les Zones Semi-Arides

ANALYSIS OF THE PERFORMANCE OF RESEARCH INSTITUTIONS

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INTRODUCTION.

The Semi-Arid Zones of Africa form major production areas for food and livestock products of the continent. However, the production potentials of this huge area are far from being realized; even worse, the resource base is subject to serious and continuous degradation as a result of recurrent droughts and rapidly growing populations. While the former has directly accelerated the desertification processes in the lowest rainfall zones, the latter leads indirectly to the same process under higher rainfall through overcultivation of a fragile resource base. While local farming technologies are often extremely sophisticated and contain valuable components for farming under high risk environments, these technologies also require important modifications to cope with the problem of sustained production under an increasingly permanent farming system (as compared to the earlier fallow systems).

For most African countries, these problems are compounded by poor infrastructures and marketing systems as well as weak (in terms of trained manpower, facilities and funding) National Agricultural Research Programmes and Extension Services, which receive relatively little support from national Governments.

The increased international awareness of Africa's food problems has caused a drastic expansion of foreign aid over the last two decades. A multitude of funding and implementing agencies operating at national and/or regional levels, through bilateral and multilateral agreements, have subsequently become active. While these developments certainly have had positive effects, they have also contributed to increased fragmentation of national research efforts and to a large degree of overlap and duplication.

It was against this complicated background that SAFGRAD was created in 1977 as an OAU/STRC Project mainly with USAID support to reinforce and coordinate agricultural research and development for major staple food crops (maize, sorghum, millet, cowpea and groundnuts) on a regional basis; the ultimate goal was to increase the quantity and quality of these food crops available to the increasing populations of semi-arid sub-saharan Africa.

SAFGRAD Phase I, targetted on regional research, was designed to develop technology in order to improve the production and productivity of food grains in semi-arid regions of sub-Saharan Africa.

The final evaluation (July 1991) of SAFGRAD Phase II, which has identified a number of positive indicators of project achievements, however, came short of quantifiable data to substantiate that the regional research networks could have comparative advantage, as an effective mechanism for building research capacity tunned to different stages of national research development and for promoting agricultural production and productivity.

Objectives and Purpose of the Study.

Based on the findings of the SAFGRAD II Project final evaluation, the purpose of the study has been to assess the efficiency and performance of the networks in the development and adaptation of agricultural technology through the national agricultural research systems; to quantify the changes of technical research capabilities of NARS as a result of networking activities; and to determine the contribution and impact of agricultural research on improving production, productivity and income resulting from the use of technology developed and adapted by the NARS.

Strategy and Methodology of the Impact Assessment

The study involved the cooperative efforts of national scientists and institutions; the network entities, particularly the Steering Committee of the respective networks and the Oversight Committee; and the International Agricultural Research Centres' particularly IITA (through the Maize and Cowpea Network Coordinators) and ICRISAT (through the Coordinator of Sorghum network in West and Central Africa and Sorghum and Millet Network in Eastern Africa).

First, the format for the collection of technical data levels 1 to 3 was developed in full consultation with more than 40 NARS scientists, and the network coordinators. The initial effort of the SAFGRAD Coordination Office in sensitizing the networks' entities and national institutions has facilitated cooperation in different countries.

With the arrival of the economist (third member of the assessment team) in July, an action plan for the collection and analysis of data was developed. This plan consisted of work programmes elaborating main activities, outputs, responsible entities, and target dates for completing activities of the assessment study.

Initially, the Steering Committee of each network identified four countries for an in-depth study. Realizing the shortage of funds and time available for the study, the Assessment Team used four basic sets of criteria with which it rated and ranked the 16 countries. This exercise led to selection of eight countries for the in-depth study as indicated in Annex

The travel plan and programme of specific activities specifing the countries to be visited and network programmes to follow were also developed. In consultation with network coordinators, the formats for the collection of technical data were dispatched in advance to the eight countries. Economic

tables for formats intended to measure the impact of research results were administered in two ways:

i) The IARC economists, for example those of ICRISAT Sahelian Centre in Niger and the West African Sorghum Improvement Programme based in Mali, assisted in the gathering the data for Niger and Mali respectively.

ii) In the countries where IARCs economists were not available national economists were contracted, (for example, Nigeria, Ghana, Kenya and Ethiopia) to assist in gathering the economic data.

Data for the impact assessment was taken, for the period 1982-1992, while focussing on SAFGRAD Phase II 1987-92.

Assessment of Impact was carried out at four levels of research and development activities. The framework for impact analysis briefly discussed below was used in certain NARS (Kenya, Malawi, Cameroon, etc.). It is based on series of relationships between inputs, outputs, and impacts at four levels of institutional development of national agricultural systems. The team has exhaustively dialogued with respective network entities in identifying appropriate indicators particularly between levels I, II and III.

Nature and Working of the Institutional Framework.

The 1987 Conference of National Agricultural Research Directors Conference adopted networking as the primary mechanism for regional cooperation.

This led to the establishment of network entities for research management and directions as described in Table 1.

1.0. Regional Research Coordination and Management.

i) Policy Guidance.

The Council of National Agricultural Research Directors is the policy making body of SAFGRAD. It established the network operational policy framework and also approved the collaborative mode (networking) as the main strategy for regional research cooperation. It also created the Oversight Committee that meets at least once a year to review and monitor the implementation of policies and to appraise the performance of the networks.

ii) Monitoring the Implementation of Network Programmes.

The Oversight Committee, established in February, 1987, is directly responsible to the National Agricultural Research Directors Council. It monitored the implementation of project activities; appraised network performance, and deliberated on policy and administrative issues related to network development. Some of the management issues addressed by this committee is summarized in Annex 2.

iii) Technical Management and Direction of Networks.

The Steering Committee of the respective networks were elected during the General Workshop Assembly by national scientists. Technical leadership of the networks was provided through the Steering Committees (SCs) each comprising 5 to 8 eminent NARS scientists. The SCO, IARCs, CIRAD, INSAH and other relevant organizations served as observers in Steering Committees of networks. Close to 45 scientists from over 15 countries have served at various times in the four Steering Committee.

The main activities and deliberations of the respective network is summarized 3, 4, 5 and 6.

Table 1 — COMPONENTS OF SAFGRAD NETWORK MODEL

Network Partners		Network Entities		Responsibilities
I. NARS				
i)	18 countries in West and Central Africa	i)	The Directors of Agricultural Research of National Programmes	- policy guidance, addressing research and development issues.
ii)	8 countries in Eastern Africa	ii)	The Oversight Committee.	- Monitoring the implementation of SAFGRAD project activities. - Management of SCO and appraisal of networks.
		iii)	Network Steering Committees	- Technical Management of Networks.
II. IARCS				
1)	IITA Technical backstop	i)	Maize Network Coordinator	- Technical execution of network programmes.
		ii)	Cowpea Network Coordinator	- Technical execution of network programmes.
2)	ICRISAT Technical backstop	i)	Sorghum Network Coordinator in West and Central Africa.	- Technical execution of network programmes.
		ii)	Eastern Africa Sorghum and Millet Network Coordinator	- Technical execution of network programmes.
3)	ICRAF	–	Semi-Arid Lowlands Agroforestry network in West Africa.	- Technical execution of network programmes.
4)	The West African Farming Systems Research Network	–	Administered by SCO Based at NARS.	– Technical execution of network programmes.
III. OAU/STRC The Scientific, Technical and Research Commission of OAU - Political and Administrative support.		–	The SAFGRAD Coordination Office	i) Coordinate research activities among NARS and with relevant government bodies. ii) Provides legal and logistic framework for network operation. iii) Serves as secretariat to network entities. iv) Facilitate the review of policy issues through regular channels of OAU. v) Promote the adaptation and transfer of Network technologies to farmers in different national programmes.

Initial deliberations of SCs included review of constraints to, and research priorities of food grain production in the semi-arid tropical Africa.

2.0. The Research Process.

i) Identification of Constraints and Research Priorities.

Review of the network reports showed systematic identification of constraints and research priorities had been undertaken by national researchers themselves during the general technical workshops. Basically, the identifications of research priorities at national levels were based on the qualitative (in many NARS) and quantitative (in few NARS) data collected from on-farm socio-economic surveys, annual research review's etc. Farmers' participation in research and development planning process was apparently minimal. At regional level, the assumption has been that national research priorities (as identified by national researchers) in aggregate cover mutual problems of research and development for respective regions.

ii) Network Strategy for Regional Research Collaborations.

The inventory and assessment of research resources (including research manpower) by each network led to categorisation of national research systems into Lead Centres, Associate Centres and Technology Adapting NARS based on their relative staff strengths, research facilities, and infrastructure as well environmental conditions.

The establishment of research priorities and the inventory of research programmes led to the establishment of network strategy that took into account the specific requirements of both potential technology generating and adapting NARS. This strategy involved the enhancement of scientific leadership among NARS.

Thus, the relatively strong national programmes served as Lead NARS Centres in their specific area of research comparative advantage.

Essentially, research at Lead Centres focussed on priority constraints in specific ecological zones. The major changes (since 1987) has been that the network scheme enabled partners such as NARS and IARCs to streamline the various (germplasm) nurseries and regional variety trials in such a way as not to overburden NARS, particularly the weak national programmes. On the other hand, the strategy enabled technology adapting countries to concentrate their efforts on adaptive research (such as regional trials, and on-farm verification tests) to quickly appraise the performance of potential technologies.

Collaborative research project activities at Lead Centres opened new challenges and opportunities to enable NARS to generate technologies not only to solve their own agricultural production problems, but also to provide widely shared the know-how to other participating countries. The research output from some of Lead NARS was assessment during the study and would be discussed following this presentation.

An important activity of networks has been the regional trials for direct exchange and evaluation of elite germplasm. This activity has facilitated the release of varieties to farmers by NARS in their respective countries. A presentation offer this one, has quantified the extent of germplasm diffusion in different countries.

3.0. The Network Partners.

i) The NARS are the major focus of network activities. As beneficiaries of the project' they are involved at various levels of network activities.

ii) *International Agricultural Centres: These provided technical backstopping for the improvement of maize and cowpea (IITA) and of sorghum and millet improvement (ICRISAT) by conducting fundamental and applied research and by providing training to achieve network objectives.*

iii) *The Networks Secretariat: As an entity of the Organization of African Unity (OAU), the SAFGRAD Coordination Office (SCO) served as a secretariat for the various Steering Committees, the Oversight Committee, and the Council of Agricultural Research Directors. The SCO served as the vehicle for the attainment of network objectives by facilitating mobility of germplasm and related technologies; acting as liaison between steering committees, international and regional organizations and NARS; and soliciting funds to support the strengthening of national agricultural research programmes.*

4.0. Adequacy and Quality of Human Resources.

Available research manpower data have been very sketchy and, in aggregate, cover several disciplines. During this assessment study attempts were made to collect data on the crop commodity networks covering the period 1982-1992. Thus far, reasonable data have been obtained on sorghum from Mali; and on maize from Burkina Faso and Ghana, while partial research manpower data on cowpea improvement was obtained from Burkina Faso, Mali, Niger, Ghana and Nigeria. It was evident from this survey, that not more than one researcher was available in each discipline (agronomy, breeding, entomology, pathology, etc.) or each crop in each of the countries selected for study.

The available research manpower for the four crop commodity networks as of 1990 is summarized in Fig. 1. Equally important,

the data showed that a considerable number of researchers (such as agronomists, pathologists, entomologist, etc.) share their time between two to three crops.

Through training, workshops, monitoring tours and diffusion of technical information (through regular publication) major changes were effected in the quality of research manpower.

As of 1986, SAFGRAD I provided long-term training to 31 participants from 10 SAFGRAD countries; of which 22 were M.Sc. level and 9 at Ph.D. levels. These scientists are now research leaders in the improvement of sorghum, maize, cowpea and millets in various countries (e.g. Burkina Faso, Cameroon, Guinea Conakry, Mali, Togo, Ghana and Senegal).

In collaboration with IITA and ICRISAT, short-term trainings (lasting from a few weeks to six months) were offered during SAFGRAD I and II to over 450 participants from West Central and Eastern Africa. Although some feedback information indicated that such trainings have made improvements in the conduct and analysis of trials, the impact of training was indirectly assessed from changes in research output. Our evaluation will be presented in a subsequent report at this meeting.

LEVEL I - IMPACT ASSESSMENT

SAMPLE - COUNTRY - ETHIOPIA

AGRICULTURAL RESEARCH IMPACT ASSESSMENT

Level I. ASSESSMENT OF INSTITUTIONAL BASE

COUNTRY - ETHIOPIA

A.1. NARS Institutional Capacity.

1.1. Research Organization.

The Institute of Agricultural Research (IAR) was established as semi-autonomous public organization in 1967. It operates under the general supervision of a Ministerial Board of Directors that include the Ministers of Agriculture (Chairman), State Farms Development, Coffee and Tea Development; Commissioners for Science and Technology, Higher Education and Relief and Rehabilitation; Head of the Economic Sector in the Office of the National Committee for Central Planning (with the rank of Commissioner); and the General Manager of IAR (Secretary). IAR enjoys reasonable autonomy in its operation. Its organizational structure has been revised on several occassions to reflect the agricultural policy and development needs of the country.

1.2. Linkages

IAR has well established linkages with other research organizations such as of the Universities, the Department of Extension of the Ministry of Agriculture and non-government agencies. Since the 1970s, the IAR/Extension Liaison Unit has been operational. Thus, the Extension Department of the Ministry of Agriculture and IAR jointly conduct on-farm Verification Trials in different ecological zones of Ethiopia. Furthermore, IAR has established reasonably good linkages with international research institutions including ILCA, CIMMYT, CIAT, CIP, IITA, ICARDA, ISNAR etc. Cooperation with these institutions generally involves manpower training, germplasm exchange, consultancy service, collaborative research in selected project areas, etc.

A.2. Policy and Plan Formulation Processes.

2.1. Research Planning Process.

The research planning exercise of IAR starts from commodity teams that review past activities of performances in order to formulate future programmes. IAR also facilitates the participation of development organizations such as Extension Department of Ministry of Agriculture, universities, and development ministries. Farming Systems Research Unit and the Research Extension Coordination Teams also fully participate in the development of the commodity programmes. Research divisions (i.e. crops, animal' etc.) further screen and consolidate the commodity team research proposals. The programmes of all divisions are scrutinized at joint meeting of the heads of research divisions. Professionals and development experts from other organizations are also invited as external reviewers. Finally, the IAR Board of Directors has the final say on approval of any plans.

2.2. Adequacy of System for Setting Research Priorities.

In general, the existing process seems to be adequate for setting research priorities and for resource allocation. The existing system can however be improved by making provision for the participation of farmers and private organizations in order to make research demand-driven and to impart impact on production, productivity and income.

2.3. NARS Involvement in Policy Formulations.

There seem to be adequate linkage between the Ministry of Economic Planning and IAR. Researchers and directors of experiment stations of IAR participate at different levels of planning as resource person to elucidate issues of agricultural research and development policy. With regard to facilities for collecting and analysis of data, IAR is just building that capacity. The collection of baseline and time series data on production, changes of crop patterns and inputs use, farm income,

are effectively carried out by other agencies such as the Central Statistics Authority.

Through the World Bank assistance, IAR is building its capacity for data analysis, reporting, and utilization.

A.3. Financial and Human Resources

3.1. Funding Level

IAR receives most of its funds from the Government. The institute's budgets primarily from government sources' has more than doubled during the last decade. IAR budget for 1990/91 has been about 12 million dollars. About 95% of the approved budget is provided, salaries and wages constituting about 30%; budget support from financial support from external sources up to 1990 has been very low. Research budget as a percentage of AG.GDP is 0.21%, while total expenditure per researcher is about $(US)35,000. IAR has reasonable accounting and financial disbursement system (although centralized). The regional research enters operate within approved budget. IAR, however, needs to develop its financial management capacity to improve its efficiency for backstopping its several research programmes at various zonal and regional centres.

3.2. The NARS has Adequate Control on Donor Fund on Agreed Programme Scheduled of Implementation.

Human Resources

The IAR has about 340 research scientists and 800 technicians; Thus, the scientists: technician ratio is approximately 1:2. It has general support staff of about 2900 persons.

This NARS is not adequately staffed for its size, particularly with regard to number of qualified scientists.

Information of researchers among various commodities, although not yet readily available, indicates that approximately 80% of the research staff are in crop commodities.

A.4 Monitoring and Evaluation.

4.1. Monitoring and evaluation process is in place through annual research reviews and occasional external reviews. IAR needs to improve its capacity for an effective research monitoring and evaluation.

A.5. External Linkage

As mentioned earlier, IAR has reasonable external linkages particularly with CIMMYT, ILCA, CIP, and SAFGRAD/ICRISAT. It has benefited from training, germplasm exchange, and expert consultation activities of these centres.

B. Programmes

B.1. Appropriateness is ensured through the planning and review processes explained above. The IAR system needs to promote farmers participation. Feedback from on-farm is received through the extension-research on-farm verification project activities as well as from the farmers field-days. Programme adequately articulates activities and resource requirements. Programmes are not adequately funded.

B.2. Linkages.

Programmes are based on commodity. For example, the major crops improvement programmes have multidisciplinary teams (i.e breeders, agronomist, pathologist, entomologists, soil scientists, agricultural economists (occassionaly), etc.) and are coordinated by national team leaders for respective major crop (i.e teff, sorghums, barley, wheat, maize, root and tuber crops etc.).

IAR, has promoted the participation of its scientists in various seminars and workshops on identified themes. For example, National Crop Improvement Meetings are held every other year (since 1967). These fora were used for discussing research results.

C. Extension Service.

Is under the Ministry of Agriculture and is fairly organized using a data base of several years. The extension service covers the whole country. It enjoys reasonable autonomy in the implementation of its programmes. External funding (mainly from World Bank, IFAD, etc.) for development through the extension department has increased during the last decade. Government allocation of budget not usually adequate (more information is being collected).

The extension service in Ethiopia has reasonable control over donor financed funds on agreed programmes. In general, however, the extension department has acute shortage of qualified staff. It needs to improve, in addition, its capacity to undertake accurate technology adoption data. Extension visits to farmers depends on the type of project support. The World Bank extension approach through training and visit is being tried in some parts of the country.

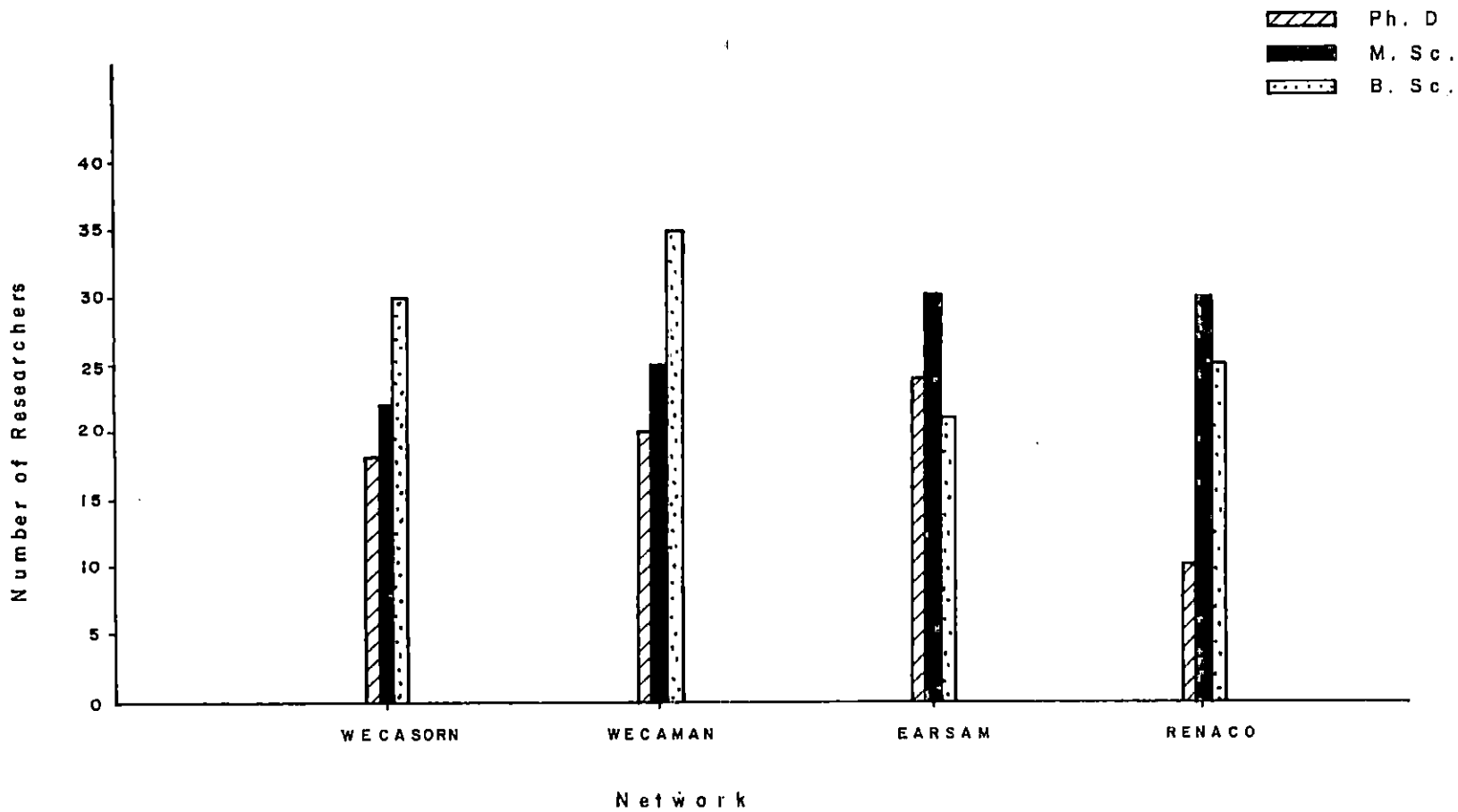

Fig. 1 Current Research Manpower in Food Grain Improvement in West, Central and Eastern Africa

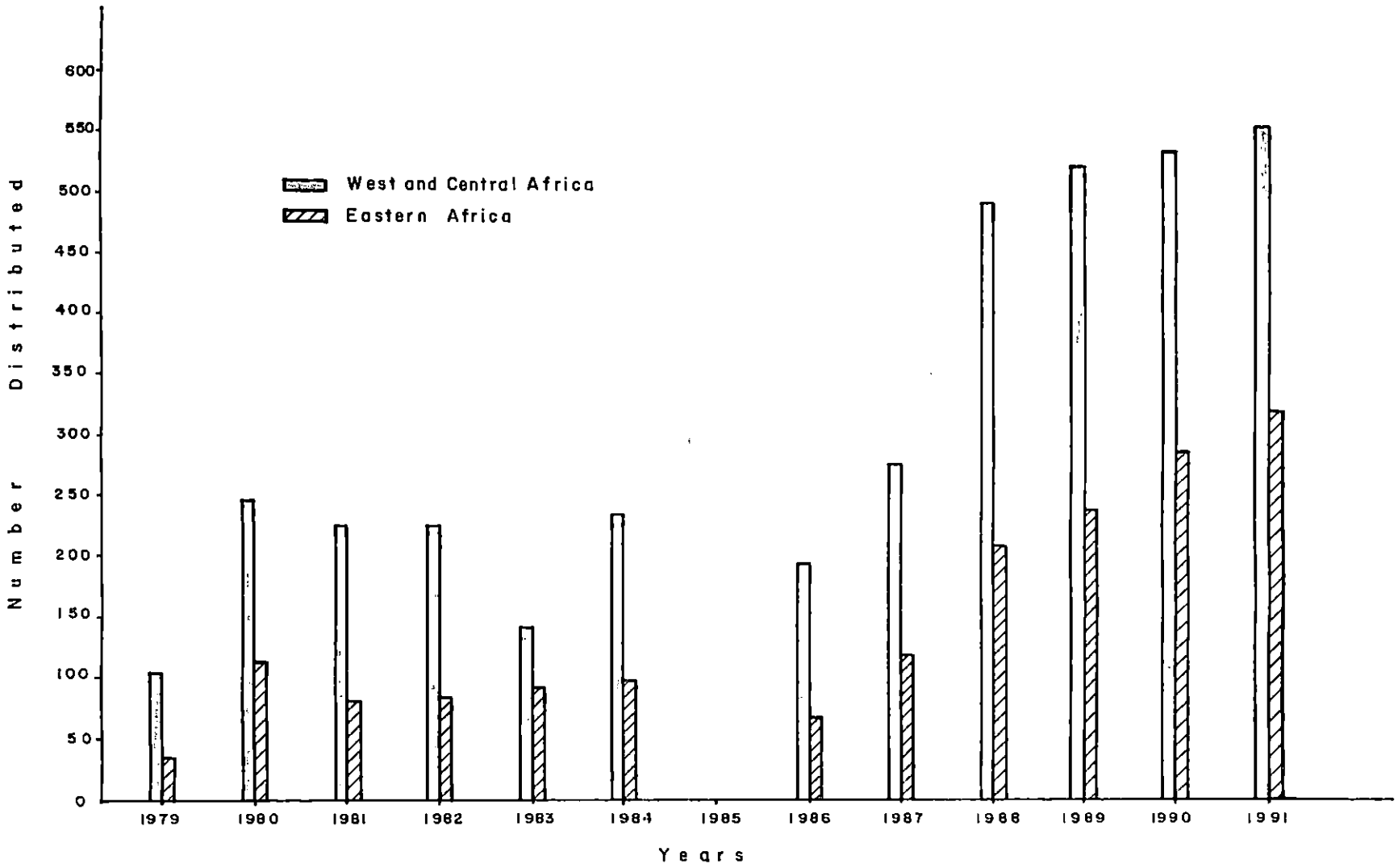

Fig. 2 Diffusion of Technical Information Through SAFGRAD Newsletter

SAFGRAD IMPACT ASSESSMENT

ENTITY* OVERSIGHT COMMITTEE

Annex 1. SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987-92

ACTIVITY	DATE		MAIN DECISIONS	DATE		MAIN ACTION/OUTPUTS	DATE		MAIN IMPACTS
1.0 Request for more financial assistance from OAU.	DEC 87		Recommended to OAU to increase its financial contribution to SAFGRAD.	DEC 87		Action taken	88		OAU has increased its contributions.
2.0 Request for financial assistance from SAFGRAD countries	DEC 87		Recommended that SAFGRAD member countries should be requested for financial assistance	DEC 87		Action taken indirectly through OAU	MARC 92		In-kind contribution by NARS
3.0 Seeking support from other donors	DEC 87		Recommended that other donors be approached for financial support	DEC 87		Action has been taken	89		ADB support for verification trials in 8 countries
4.0 Streamlining publicity for different crop commodity networks	DEC 87		Recommended that activities of all crop commodity networks be publicised through SAFGRAD Newsletter	DEC 87		Newsletter carries information on all networks			Efficient dissemination of information

* Oversight Committee.

SAFGRAD IMPACT ASSESSMENT

ENTITY*

SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987-92

ACTIVITY	DATE		MAIN DECISIONS	DATE		MAIN ACTION/OUTPUTS	DATE		MAIN IMPACTS
1.0 Making sorghum coordinator more effective	DEC 87		Recommended that ICRISAT should appoint a full time coordinator for the West and Central African Sorghum Network	DEC 87		Full time coordinator appointed	1989		Network is much better managed
2.0 Harmonization of SAFGRAD and CORAF Maize networks	DEC 87		Recommended that OAU should take action on harmonization of SAFGRAD and CORAF maize networks	DEC 87 AUG 88 FEB 91		OAU has written to French government on the issue	1991		Agreement that harmonization will take plance in 2 years
3.0 Self-appraisal of network activities	DEC 87		Recommended that self appraisal should be conducted by networks during biennial workshops and monitoring tours by Dec 1988	DEC 87 AUG 88		Self appraisal done for maize and cowpea network. Not so in EARSAM and Western and Central African Sorghum networks	89 90		Improvement in the functioning of maize and cowpea networks
4.0 Publicising SAFGRAD accomplishments	AUG 88		Recommended that SAFGRAD accomplishments are publicised in local, regional and international media	AUG 88		Newsletter and SAFGRAD brochure etc published			SAFGRAD achievements well known

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SAFGRAD IMPACT ASSESSMENT

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SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987-92

ACTIVITY	DATE		MAIN DECISIONS	DATE		MAIN ACTION/OUTPUTS	DATE		MAIN IMPACTS
1.0 Making SAFGRAD a permanent body under OAU	DEC 87		Recommended to OAU/STRC to institutionalize SAFGRAD as a permanent organization under OAU	DEC 87 AUG 88 FEB 89 FEB 91		OAU meeting on SAFGRAD accepted the permanent status of SAFGRAD	SEPT 91		Enhanced confidence of OAU and governments in SAFGRAD
2.0 Ensuring that West and Central African Sorghum Network obeys laid down procedures	DEC 87		Urged Sorghum Steering Committee to comply with laid down procedures by choosing its own chairmen and increasing its membership to six	DEC 87		Sorghum Steering Committee has complied with procedures.	89		Improved functioning of Steering Committee
3.0 Attraction of donor funding.	DEC 87		Proposed the ocassional use of consultants for the development of projects for donor funding	DEC 87		This has been accomplished; ADB, ECA projects			Funding secured from ADB.
4.0 Improving the management of SAFGRAD	DEC 87		Recommended strengthening of SCO staff.	DEC 87 AUG 88		No action. Lack of funds.			Reduced effectiveness of SCO.

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SAFGRAD IMPACT ASSESSMENT

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SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987-92

ACTIVITY	DATE		MAIN DECISIONS	DATE		MAIN ACTION/OUTPUTS	DATE		MAIN IMPACTS
1.0 Administration of funds for Networking	AUG 88		Recommended that SCO and OAU/STRC play activie role in administration of funds for SAFGRAD networks	AUG 88		No action. Funds released to IARCs strictly controlled and administered by them.			No impact.
2.0 continuity of support for the post of Director of Research	AUG 88		Recommended funding support for post of Research Director to be sought as IFAD-FSR programme was ending.	AUG 88		Director of Research post supported by USAID	APRI 89		Continued services obtained from Director of Research
3.0 Data retrieval and expeditions accounting for funds	AUG 88		NARDs should ensure speedy retrieval of data and expeditions accounting for network funds	AUG 88		Expeditions returns on data and accounts	89 90 91		Improved functioning of networks
4.0 Publicising SAFGRAD activities	FEB. 89		Publication of a document on SAFGRAD experiences in transfer of technology over the past decade in selected countries	FEB 89		Several reports from networks. Quarterly newsletter			Greatly improved information on SAFGRAD.

* Oversight Committee.

SAFGRAD IMPACT ASSESSMENT

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SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987-92

ACTIVITY	DATE		MAIN DECISIONS	DATE		MAIN ACTION/OUTPUTS	DATE		MAIN IMPACTS
1.0 Improving accounting procedures in NARS	FEB 89		Recommended SCO assistance to NARS in accounting for funds from SAFGRAD.	FEB 89		Financial Controller visited NARS to streamline their accounting procedures	91		Improved accounting for funds from SAFGRAD.
2.0 Formulating Strategic Plan of SAFGRAD.	FEB 89		Recommended further work on Strategic Plan of SAFGRAD.	FEB 89		Improvement made to Strategic Plan	FEB 90		Acceptable long-term plan of SAFGRAD known

* Oversight Committee.

SAFGRAD IMPACT ASSESSMEN ENTITY*

SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987-92

ISSUES/ ACTIVITY	DATE		MAIN DECISIONS	DATE		MAIN ACTION/OUTPUTS	DATE		MAIN IMPACTS
1.0 SAFGRAD Strategic Plan	FEB 90		NARDs should be sent executive summaries of SAFGRAD Strategic Plan	FEB 90		Summaries of Strategic Plan of SAFGRAD sent to NARDs	MAY 90		Long-term plans of SAFGRAD clarified
2.0 SAFGRAD Strategic Plan	FEB 90		Full copies will be distributed at NARDs meeting in Feb 1991	FEB 90		NARDs meeting in Feb 1991 could not be held because of financial constraints.			Inputs of NARDs to Strategic Plan delayed
3.0 New Networks	FEB 90		New Networks to be accepted must have capacity to positively strengthen existing SAFGRAD commodity networks.	FEB 90		SALWA Agroforestry Network accepted and functioning.	FEB 91		Confidence of NARS in SALWA enhanced
4.0 Internal Evaluation of SAFGRAD	FEB 90		Two 4-man teams were constituted for internal evaluation of SAFGRAD networks	FEB 90		Internal evaluation completed. A number of proposals made for improving networks.	SEPT 90		Improvements in future functioning of SAFGRAD known.

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SAFGRAD IMPACT ASSESSMENT

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SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987-92

ACTIVITY	DATE		MAIN DECISIONS	DATE		MAIN ACTION/OUTPUTS	DATE		MAIN IMPACTS
1.0 SPAAR support for Networks.	FEB 90		IC was to stop over in Washington D.C. to discuss support for SAFGRAD by SPAAR	FEB 90		IC discussed issue with SPAAR officials	90		No positive outcome.
2.0 NARS contribution to SAFGRAD .	FEB 90		In-kind contribution of NARS should be fully elaborated.	FEB90 FEB91 NOV91		Contribution of NARS now quantified.	92		Donors aware of contribution of NARS.
3.0 Change of network management.	FEB 90		A 2-year transitional phase envisaged	FEB90 FEB91		No SAFGRAD III No action.			Management still in IARCs
4.0 Change of network management			To effect changes scenario 1; Current African coordinators transferred to SCO			No SAFGRAD III			Management still in IARCs

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SAFGRAD IMPACT ASSESSMENT

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SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987-92

ACTIVITY	DATE		MAIN DECISIONS	DATE		MAIN ACTION/OUTPUTS	DATE		MAIN IMPACTS
1.0 Networks management.	FEB 90		Or 2 NARS scientists selected and posted to a lead centres (not in their own country).	FEB 90		No action. SAFGRAD III not yet designed.			No impact.
2.0 Internal SAFGRAD organogram.	FEB 90		If funds are available 3 senior staff positions could be filled. (A planner, communicators officer and Liaison officer).	FEB 90		Positions not filled because of lack of funds.			Effectiveness of SCO only 80%.
3.0 Publication of a scientific journal of agriculture by FSR Network.	FEB 90		Recommended joint publication of journal with other networks.	FEB 90		Four volumes of Journal of Agric. Systems published solely by RESPAO. Other scientists encouraged to contribute	91 92		Improved dissemniation of scientific information
4.0 Publicising SAFGRAD achievements	FEB 90		Recommended that funds be made available for publication of SAFGRAD achievements	FEB 90		Brochure on SAFGRAD published.			Enhancement of information on SAFGRAD by 60%.

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SAFGRAD IMPACT ASSESSMENT

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SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987-92

ACTIVITY	DATE		MAIN DECISIONS	DATE		MAIN ACTION/OUTPUTS	DATE		MAIN IMPACTS
1.0 Active presence of SCO in Eastern Africa.	FEB 91		Recruitment of Liaison Officer for East Africa should be done as soon as funds are available	FEB 91		Liaison Officer for Eastern Africa not recruited because of lack of funds			SAFGRAD's image in Eastern Africa not high.
2.0 Improvement of interactions with IARCs	FEB 91		SAFGRAD's participation in IARCs programme review and IARCs participation in SAFGRADs OC meetings	FEB 91		Reciprocal participation of policy makers of IITA, ICRISAT and SCO in each others program review	NOV 91		Coordination of programmes and activities have improved
3.0 Strengthening of weak NARS	FEB 91		A fellowship exchange programme to enable researchers to work in different countries for 3-12 months.	FEB 91		Not yet initiated			No impact.
4.0 Impact assessment of networks	FEB 91		The proposed impact assessment should as far as possible be based on outputs stipulated in the project document.	FEB 91 NOV 91		Impact assessment is still proceeding			Other activities at a low level.

* Oversight Committee.

SAFGRAD IMPACT ASSESSMENT

ENTITY*

SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987-92

ACTIVITY	DATE		MAIN DECISIONS	DATE		MAIN ACTION/OUTPUTS	DATE		MAIN IMPACTS
1.0 ADB support for verification trials.	FEB 91		Network Coordinators to ensure harmonious interaction with on-farm activities of scientists.	FEB 91		On-farm trials proceeding	91 92		Harmony of commodity work with on-farm verifications.
2.0 Delay in external evaluation	FEB 91		USAID to expedite evaluation in order not to jeopardise project continuity	FEB 91		Evaluation completed but very much delayed	NOV 91		Low level of funding and operations of SAFGRAD
3.0 Renewal of membership in Steering Committee	FEB 91		Stipulated procedures be followed in membership renewal multidisciplinarity should be ensured	FEB 91		Members of steering committee of WECA-SORN on elected on merit and or multi-dicisplinarity lines	91		Improved functioning of Steering Committee

* Oversight Committee.

SAFGRAD IMPACT ASSESSMENT

ENTITY*

SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987-92

ACTIVITY	DATE		MAIN DECISIONS	DATE		MAIN ACTION/OUTPUTS	DATE		MAIN IMPACTS
1.0 SAFGRAD Donors Meeting	FEB 91		Requested SCO to coordinate the meeting expected to finally come on during 1991	FEB 91		Donors meeting not held because of scheduling difficulties			Low level of funding for SAFGRAD.
2.0 Improving relations with ICRISAT	NOV 91		New Director General of ICRISAT to be written to regarding SAFGRAD's expectation of ICRISAT	NOV 91		Letter written Director-General of ICRISAT visited SAFGRAD headquarters	92		Improved relations with ICRISAT
3.0 SPAAR Assistance for Networks	NOV 91		OC members attending SPAAR December meeting to request assistance from SPAAR for regional networks	NOV 91		Discussion on subject did not take place			No impact
4.0 Millet Network and SAFGRAD.	NOV 91		Council of NARDs be asked to deliberate on integration of millet network into SAFGRAD	NOV 91		NARDs have not met owing to inadequate funding.			Millet network not enjoying full SAFGRAD support.

* Oversight Committee.

SAFGRAD IMPACT ASSESSMENT

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SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987-92

ACTIVITY	DATE		MAIN DECISIONS	DATE		MAIN ACTION/OUTPUTS	DATE		MAIN IMPACTS
1.0 Socio-economic studies in network activities	NOV 91		Socio-economic considerations should be incorporated in design of SAFGRAD III.	NOV 91		SAFGRAD III not yet designed Impact Study results awaited			No impact.
2.0 Inter-network activities	NOV 91		Inter-network subject matter task forces to be created for problems of multi-network dimensions	NOV 91		Inter-network task forces not created yet.			No impact.
3.0 Project formulation for donor funding.	NOV 91		Projects to be developed with the participation of coordinators, steering committees and other resource persons.	NOV 91		Not yet undertaken.			No impact.
4.0 OAU meeting on Transforming SAFGRAD into a permanent institution	NOV 91		Further discussion deferred until there was certainty about funding from OAU and donors.	NOV 91		No action			No impact.

* Steering Committee or Oversight Committee.

SAFGRAD IMPACT ASSESSMENT

ENTITY*

SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987-92

ACTIVITY	DATE		MAIN DECISIONS	DATE		MAIN ACTION/OUTPUTS	DATE		MAIN IMPACTS
1.0 Training in Scientific Writing.	NOV 91		Course similar to one held in West Africa be planned for Eastern and Southern Africa.	NOV 91		Donor assistance still being sought.			Improved writing skills of course participants
2.0 Revival of Sponsoring Group	NOV 91		Terms of reference and membership of Sponsoring Group accepted.	NOV 91		Terms of reference and membership available.	NOV 91		No impact yet.
3.0 SAFGRAD Annual Report	NOV 91		Recommended that SAFGRAD produce annual reports beginning with 1991.	NOV 91		1991 Annual Report published	92		SAFGRAD activities better known.

* Oversight Committee.

SAFGRAD IMPACT ASSESSMENT

ENTITY* MAIZE NETWORK STEERING COMMITTEE

Annex 2 - SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987-92

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
1.0. NETWORK ESTABLISHMENT	1987	1. Identification of constraints	1987	1. A catalogue of maize production constraints prepared	1987	1. Identification of 5 lead centers and 11 technology adapting NARS
				2. Constraints prioritized	1987, 1990	2. Focus on research areas of importance
				3. Human resources and infrastructure inventorized	1987	3. Training programs planted.
				4. Training needs identified	1987	
		2. Formation of a Steering Committee	1987	1. 6 Active NARS scientist to steer the Network	1987 1989 1991	1. Network activities planned and monitoring by Steering Committee
				2. A chairman and 2 Secretaries elected.		2. Visits of Steering Committee members and coordinator to National programs.
				3. Network Coordinator appointed.	1987 1988 1992	
		3. Development of Research Strategy	1987	1. Establishment of collaborative research	1987	1. 6 region-wide research problems (maturity, streak *Striga*, borer, tolerance, on-farm testing, agronomic problems) addressed.
				2. Allocation of research responsibilities	1987 1988 1991	2. Increased collaboration and sharing of research tasks between Lead Centers and IARCs.

*Steering Committee or Oversight Committee.

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
2.0 TRAINING		1. Technical Training at Kamboinse	1988 1989 1989	1. 15 technicians offered 5-month practical training in field plot techniques, trial management, variety maintenance, seed multiplication, statistical analysis, data interpretation and analysis.		1. Capability of technicians to manage trials improved. 2. Increase in recovery & useable ~~establish~~ data 3. Improvement in seed multiplication 4. Increase in efficiency of making crosses.
		2. Computer course in the use of MSTAT for data analysis	1991	1. 6 scientists trained in the use of MSTAT for data analysis		1. Capability of some NARS scientists to analyse field data improved. 2. Data analyzed more easily and faster. 3. Improved capability in generating field. books, randomization of entries of trials.
		3. 4 slots requested in IITA Technical Training.	1990	1. None		None
		4. Request for Visiting scientist position for NARS in IITA.	1987	1. 4 NARS scientists offered visiting scientists position in IITA.	1988 1989 1991	1. Improved research capability of scientists. 2. Improved familiarity with IITA germplasm and breeding methodology. 3. Increased collaboration between NARS and IITA scientists.
		5. Proposal for higher degree training prepared.	1987 1991	None		None

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
3.0. **TECHNICAL SUPPORT**		1. Visits by Coordinator and other members of the Steering Committee.	1987-1991	1. Identification of needs of some weak national programs. 2. Provision of assistance in the form of research materials (eg. Mali, Guinea, Central Africa Republic, Burkina Faso). 3. Problems in the above national programs identified. 4. Plans made to train one two scientists/ technicians at CIMMYT, IITA and SAFGRAD. 5. Restructuring of national programs (eg. Benin). 6. Practical guidance given on trial management, data collection etc. 7. Increased avenues for scientist-scientist-contact.	1987 1987 1988 1987 1988 1988 1988	1. Improved implementation and efficacy or research trials. 2. Institutionalization of National variety trials, prudcent varietal and germplasm maintenance seed production in several countries. 3. Increased and diversified research activities. 4. Improved capacity and effectiveness of some NARS to conduct research (eg. Benin, Mali). 5. Increased effectiveness of some NARS to participate in Network. 6. Exchange of technological information among NARS facilitated through visits. 7. Spill-over of research technologies to other countries eg CMS 8602, released in Chad was due to scientists to scientist contact.

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
		2. Visits by IITA scientists		1. *Striga* sick plots established in Ghana, Cameroon, Togo and Benin. 2. Streak screening facilities established in Cameroon, Togo and Ghana. 3. Identification of larger grain borer in Burkina Faso. 4. Improved collaboration of NARS scientists with IITA Maize Program in hybrid development.	1990 1991 1988 1990 1991	1. Increase in *Striga* research activities by Lead Centers. 2. Increased in number of of streak resistant varieties tested and released by NARS. 3. Improved capacity and effectiveness of NARS to conduct research. 4. Increase in number of inbred lines and hybrids developed by some NARS. 5. Increased exchange of germplasm between NARS and IARC's eg. inbred lines of Cameroon and Ghana are now being used by IITA and vice versa.
4.0 FINANCIAL SUPPORT	1987-1992	1. Provision of funds and small research equipment to NARS ($108,277 utilized).	1987-1992	1. Availability of funds for seed multiplication and varietal maintenance by Technology adapting NARS. 2. National budget of Lead Centers supplemented by Network. 3. Upgrading of research facilities.	1987-1992	1. Increase in research facilities. 2. Improvement in precision of data collected. 3. Increase in research capability of weaker NARS. 4. Improved capacity of Lead NARS to generate technologies. 5. Increase availability of seed of improved varieties. 6. Increased in the number of countries participating in the Regional Trials.

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
						7. Increase in the number of sets of Regional Trial requested by NARS.
5.0 **EXCHANGE OF INFORMATION**	1987	1. Organization of workshop	1987 1989 1991	1.1. 80 NARS scientists from 15-17 countries attended workshop. 1.2. 40 scientific papers presented by NARS at workshop.	1987 1989 1991 1987 1989 1991 1988 1990	1. Enhanced research capability and capacity of national programs. 2. Increased scientific leadership of NARS to direct Network. 3. Increased avenues for scientist to scientist contact. 4. Increased avenues for germplasm exchange.
		2. Organization of Monitoring Tours.	1988 1990	2.1. Monitoring Tour organized for 8 scientists of the Network to Burkina Faso and Ghana in 1988 and 11 scientists to Cameroon and Nigeria in 1990.		
		3. Visits of Coordinators and other members of Steering Committee to National Programs.		3.1. From 1987 to 1991 all the Network countries were visited by the coordinator and/or by members of Steering Committee.	1987-1991	
		4. Organization, Editing and publication of workshop, seminar and meeting proceedings.	1987-1992	4.1 Agronomist seminar organized for 20 National research agronomist from 12 countries and 13 resource person from IITA, ICRISAT and some national research institution.	1991	

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
		5. Publish country reports, proceedings of workshops, seminars, reports on Steering Committee meetings, regional trials results and technician training reports.		5.1. Eleven reports on Steering Committee meeting published. 5.2. Compilation of Regional Trials results from 1989-1992. 5.3. Six special publications on workshops proceedings maize varieties in SAFGRAD Regional Trials, maize production in West and Central Africa. 5.4. Publication of maize technician trainee's reports of 1988, 1989 and 1990.		1. Research capabilities of NARS scientists strengthened. 2. Exchange of information facilitated. 3. Linguistic barriers between Francophone and Anglophone scientists broken as result of closer interaction.
6.0 **COLLABORATIVE RESEARCH**	1987	1. Resident research by coordinator.	1987	1.1. 10 early drought tolerant varieties and 15 extra-early maize varieties developed as well as 4 improved agronomic practices (tied ridging seed treatment, fertilizer recommendation)	1987-1992	1.1.1 Increase of maize production in Network member countries. 1.1.2 Movement of maize into new frontiers. 1.1.3 Increase in maize productivity of some Network member countries.
				1.2. Through the network 33 late and intermediate varieties, 24 early maturing varieties and 16 extra-early varieties has been made available to NARS.	1987-1992	1.2.1 Increase in germplasm availability.

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
		2. Research responsibilities assigned to 6 lead NARS.	1987 1988 1991	2.1. 26 varieties originating from NARS have been made available to Network member-countries by some NARS. 2.2. Improved agronomical package developed by Lead Centers.	1987-1991	2.1.1 Same as 1.11 to 1.21. 2.1. Research problems once reserved for IARC's now gradually being addressed by Lead Centers. 2.2. Seed treatment with Marshall 25st established to improved seedling vigor, and 100% more more grain yield than untreated seed. 2.3. 33:1 benefit/cost ratio demonstrated in favor of the use of Marshall over control: Thioral 2.4. In Soudan savana, the contribution of improved technological component to local maize yield were as follow: - 5% for tillage - 27% for seed treatment - 38% for fertilization

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
						2.5. Management practises for early and extra-early maize established as well as optimum plant density.
		3. Review of collaborative research.	1991	3.1. Lead Centers assigned additional responsibilities.		
		4. Establishment of 3 working groups (Breeding Agronomy & Plant Protection)	1991	4.1. 6 research priority identify by breeding working	1991	4.11 Rating scale of 1-9 1-9 adopted for disease and *Striga* ratings.
				4.2. Standardization of scoring system for disease and *Striga* rating.		
				4.3. Standardization of tolerance, resistance terminology.	1991	4.41 Stability of production achieved throught the use of of streak resistant varieties available.
				4.4. Request for research intensification of maize utilization and storage.	1991	4.51 Heterotic pool being developed by IITA, Ghana and Cameroon.
				4.5. Request for only streak resistant varieties to be tested in regional trials.	1991	

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
				4.6. Request for emphasis on the development of base populations (taking into account heterotic groups) by IITA instead of finished varieties, hybrids and inbred lines.	1991	
				4.7. Request for Regional Agronomic Trial.		
		5. Reports on Collaborative Research to be presented.	1987	1.1. Lead NARS presented progress reports on assigned responsibilities.	1987-1992	
				1.2. Following the presentations, recommendations were made by the Steering Committee.	1987-1992	
7.0. **REGIONAL TRIALS**	1987	1. Variety Trials to be conducted	1987	1.1. 3 types of Regional Uniform Variety Trials developed and distributed to NARS		1.1. 21 varieties from RUVT series released in Network countries.
				135 RUVT-extra-early	87-92	
				192 RUVT-Early drought tolerant and	87-92	1.2. Extension of maize hectarage in all the 17 Network-member countries.
				63 RUVT late trials conducted by NARS.	87-89	
				1.2. Through population improvement new version of varieties were developed and evaluated in the Regional Trials.		1.3. Movement of maize into new frontiers as the result of the availability of extra-early varieties from the network.

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
						1.4. Early and Extra-early varieties fill hunger gap in some SAFGRAD member countries.
		2. Agronomy trials to be conducted	1988	2.1. Availability and adoption of improved agronomic practices such as fertilizer rates, planting densities, seed treatment with Marshall 25 ST tied ridging, timing of fertilizer application for extra-early varieties, etc.	1990 1991	2.1. Increase in production and productivity in all Network member countries.
		3. On-farm trials initiated in most NARS.	1990	3.1. Funds made available to conduct on-farm research in selected NARS.	1990	3.1. Increase in adoption rate by Farmers of participating Network countries.
		4. Seed multiplication encouraged.	1990	4.1. Seed made available by Network to NARS. 4.2. Training of technicians in seed production.	1991	4.1. Same as 3.1.

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
8.0 HARMONIZATION OF THE SAFGRAD AND CORAF NETWORKS NETWORK	1987	1. Meeting of SAFGRAD and CORAF Networks to harmonize activities.	1990	1. SAFGRAD Network assigned responsibility for semi-arid zone.	1990	1. Duplication of activities of SAFGRAD and CORAF Networks avoided.
		2. Harmonization Committee set up		2. CORAF Network assigned responsibility for for humid zones and irrigated maize in semi-arid zone.	1990	2. Meetings of both Networks planned so that there are no conflicts of interests on.
		3. Harmonization committee recommended that the executive bodies of the two networks should explore ways of marging the two networks within two years from the date of the meeting	1990	3. Common production constraints in the mandate areas were identified, prioritized and responsibilities assigned to the two Networks.	1990	3. Anglophone maize scientists made members of CORAF Network.
				4. A calendar of activities of each Network was prepared.	1990	
				5. Meetings of each Network to be attended by coordinators of both Networks.	1990	
				6. Training needs of the two networks identified.	1990	
				7. Request for Anglophone maize scientists to be members of the CORAF Network.	1990	

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
9.0 SAFGRAD IMPACT ASSESSMENT STUDY	1991	1. Cameroon, Ghana, Nigeria, Togo, Benin, Mali and Burkina Faso should be visited for the impact assessment study. 2. Parameters such as diseases and pest, yield stability should be taken into consideration in the impact assessment besides yield. 3. Flow of germplasm through trial stages should include population development and progeny testing. 4. Emphasis should be placed not only on the transfer of germplasm from IARC's to NARS but also between NARS.	1992	1. Ghana, Cameroon, Burkina Faso, Niger, Mali, and Nigeria visited. Decisions were taken into consideration in the preparation of the technical data collection forms.	1992	Not yet. Not yet.

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
Discussion on ways to improve Network performance	1991	1. IPTT to be conducted in specific research areas such as *Striga* resistance/ tolerance selection.	1992	Yet to be taken.		None
		2. Improvement in data collection by NARS suggested.	1992	" "		None
		3. Format for reports on collaborative research standardized.	1992	" "		None
		4. Redifinition of Lead Centers, associate centers and weak centers.	1992	" "		None

SAFGRAD IMPACT ASSESSMENT
ENTITY * EARSAM STEERING COMMITTEE

Annex 3 - SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987 - 92

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
- Idenfitication of network research priorities for sorghum & millets	1986	Lead NARS research approach was recommended	1986	- Sudan & Ethiopia for Striga - Sudan & Kenya for drought - Uganda & Somalia for Stalk borer	1986	- More efficient way of utilising NARS institutions - Ready access of materials and services leads to enhanced NARS capabilities
- Characterization of different sorghum growing environments	1986	Each country send agro-climatic data to R.C.	1986	- Data collected and sent to ICRISAT - Environments were identified and classified	1986	- The process of identifying suitable varieties was hastened
- Documentation of existing acreage under sorghum in each NARS	1986	Each country - estimate area under sorghum - estimate area potential for sorghum	1986	- Crop zonation in effected		- Proportion of research effort for each zone is defined
- Strenghening the national capacity For research thru degree and in-service training	1986					
- Collaborative research Project approach	1987	Resistant lines to* be contributed by Scientists from NARS	1987			

* Steering Committee

* different stress factors

SAFGRAD IMPACT ASSESSMENT
ENTITY * EARSAM STEERING COMMITTEE

SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987 -92

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
- Review of 5 th EARSAM regional W/shop resolutions in Bujumbura	1987	Organize a short course in 1989 on Crop protection and Seed production	1987			
- Discussed the orgazation of the 6th Workshop and monitoring tour	1987	- W/shop to be in Somalia - Tour also to be held during the workshop	1987	- 6th Workshop held - 59 people atteded - 40 papers presented - Monitoring tour was conducted	1988	- Broadening area of contact between scientists leading to greater exchange of information of material - Sorghum selections made increased diversity in national programs
- High degree training and short course on seed produc	1987			- No funds currently for B.Cs, M.Sc or Ph.D training - Short course was held and 50 people atteded	1987	Increased awareness of good seed was felt.
- Germplasm movement and evaluation	1988	Formulation of regional test nurseries and trials	1988	One prelim trial with more thqn 100 entries and three advanced trials - sorghum 41 entries - p.millet 16 entries and - f.millet 16 entries were planted	1988	Vast numbers of introductions made available to network scientists
- Training course on crop protection	1988	- Course to be in Kenya (entomology) & India (Pathology)	1989 1989			

* Steering Committee

SAFGRAD IMPACT ASSESSMENT
ENTITY * EARSAM STEERING COMMITTEE

SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987 -92

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
- The regional workshop	1988	- To be held in Kenya in 1990	1988	- Workshop held in Kenya - 79 people atteded - 42 papers presented	1990	
- Collaborative projects	1988	- Solicit assistance from ICIPE and SADCC/ ICRISAT for stalk borer work - Eight new projects be designated to national programs	1988 1988	- Elite materials sent to other NARS as observation nurseries - No collaborative projects on : . finger millet blast . leaf blight . grain mold	1989 1988	
- Monitoring tour	1988	- To be held in Sudan during ARC Sudan/ INTSORMIL Sorghum workshop in 1989				
- EARSAM Newsletter	1988	- R.C. to develop format	1988			

* Steering Committee

SAFGRAD IMPACT ASSESSMENT
ENTITY * EARSAM STEERING COMMITTEE

SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987 -92

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
Manpower development in the region	1989	- Train more people to sustain agric. research - Training of technicians to B Sc level - each country's responsibility	1989	- Currect and required manpower quantified for 1991-95 Curent : 14 Ph.D 26 M.Sc 34 B.Sc Required : 24 Ph.D 29 B.Sc	1989	Linkages between national programs in the network
Prioritizing short course topics	1989	- Following were suggested . Utilization . Post harvest tech. . Breeding techniques . Data collection & analysis. - R.C. to investigate with KIRDI & food research centre in Sudan on dates to conduct food tech. course	1989			- Clear focus on network research priorities - Complete package for technology transfer

* Steering Committee

SAFGRAD IMPACT ASSESSMENT
ENTITY * EARSAM STEERING COMMITTEE

SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987 -92

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
Gerplasm generation and technology transfer	1989	Suggested to include diverse sorghums & millets with specific adaptation	1989	- Germplasm flow chart was develped amd adopted	1989	NARS Scientists followed same pattern for germplasm transfer.
				- A list of sorghum and millet varieties released and pre-released was up-dated	1989	Assistance in the release or proposal for reslease of varieties.
Collaborative research projects	1989	Recommended that research proposals be submitted to S.C. for approval	1989	S.C. developed formats for collaborative research projects and subsequent progress reports.	1989	Effective monitoring system of collaborative research projects
		Review, evaluate and up-date current C.R.P.	1989	- Criteria for selecting lead research centres for specific common problems developed.	1989	Concept of a working together relationship

* Steering Committee

SAFGRAD IMPACT ASSESSMENT
ENTITY * EARSAM STEERING COMMITTEE

SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987 -92

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
				- Concept of TPN and TAN arrived at.	1989	
National research support	1990	- suggested that 20 % of the NARS support funds be allocated to TAN for running regional trials.	1989	- Procedure developed for NARS willing to receive funds for regional trials.	1989	- Logistical support improved expt plot management
		- Recommended that 80% of network support funds be allocated to to NARS with on-going C.R. Projects	1989	- A national approach for resource allocation between programs arrived at	1989	
Collaborative research projects	1990	- Recommended that country reps in the S.C. should ensure that lead scientists sign proposal forms and prepare progress reports of C.R. Projects.				

* Steering Committee

TPN : Technology Production NARS
TAN : Technology Adopting NARS

SAFGRAD IMPACT ASSESSMENT
ENTITY * EARSAM STEERING COMMITTEE

SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987 -92

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
National research support	1990			The S.C. approved an allocation of USD 3,000 per year for a NARS with on-going C.R.P.	1990	
				The S.C. approved an allocation of USD 10,000 for Somalia's Stern borer collaborative research work	1990	
Monitoring tour	1990	Recommended to take place in Ethiopia in 1990		- The tour was conducted - Sorghum selections were made from the Ethiopian program	1990	
Short course	1990	Suggested that a short course on breeding technique be held in Kenya in 1991 for 2 weeks	1990	- Course was held but scientists from Ethiopia and Somalia could not attend	1991	Enhanced data recording and analysis leading to good and reliable results and inter-pretation - Improved data recovery from NARS of about 70 %

* Steering Committee

SAFGRAD IMPACT ASSESSMENT

ENTITY: RENACO Steering Committee

Annex 4 - **SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987-92**

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
Workshop	23-27 March 1987	i. To create the Cowpea Research Network for West and Central Africa. ii. Establish cowpea Steering Committee.	23-27 March 1987 23-27 March 1987	i. The Network became operational ii. Steering Committee was established.	23-27 March 1987	National scientists in West & Central Africa are actively involved in Technology development research to date.
First Steering Committee Meeting.	23-27 March 1987	i. Review major cowpea production constraints in the sub-region. ii. Inventorize strengths of each national program. iii. Allocate technology development research to national programs. iv. Review technology available within the sub-region and identify those suitable for regional trials.	23-27 March 1987	i. Common production constraints were identified ii. ~~Four~~ Five national programs were given responsibilities for technology development research (Burkina Faso, Cameroon, Niger, Nigeria, and Senegal). There was reservation for Niger.	23-27 March 1987	i. Proposition of new varieties for regional trials in 1989 by Burkina Faso and Nigeria. ii. Feedback on regional trials received for 56 out of 92 sets sent.

		v. Recommended need for training and exchange of scientific information.		iii. Seven regional trials in 92 sets were sent to national programs upon request		iii. Increased on-station experiments in member countries in 1989
		vi. Network Coordinator was requested to provide evidence that Niger could serve as Lead Center.		iv. Training needs were identified in March 1988 and a monitoring tour was organized in September, 1988. Decision was taken in March 1988.		IV Technology development research activities with spill over to all member countries are being conducted by ICRISAT Lead Centers
Seminar for scientists	9-12 Nov., 1987	Scientiststs from Nigeria (3), Niger (1), Senegal (2), Burkina Faso (1), Cameroon (2), to be invited for Seminar.	9-12 Nov., 1987	A Seminar for scientists from Nigeria (4), Niger (2), Senegal (2) Burkina (2), Cameroon (1) and Ghana (1) was organized at IITA in November, 1988.	14-25 Nov., 1988	New varieties were nominated by Burkina Faso, Niger, Senegal, Nigeria and Ghana for regional testing in 1991.
Cowpea Monitoring tour	9-12 Nov., 1987 →	Decision was taken to organize a cowpea monitoring tour with participants from Mauritania, Cape Verde, Guinea-Bissau, Guinea Conakry, Chad, Côte d' Ivoire, The Gambia, Senegal and Mali. Countries to be toured were Burkina Faso, Niger and Nigeria including IITA.	9-12 Nov., 1987	Scientists from six countries (Burkina, Cape Verde, Guinea-Bissau, Guinea Conakry, Senegal and Niger) participated in a monitoring tour in September, 1988.	Sept. 1988	Increased adaptive research in participating countries and identification of new varieties, adapted to the respective countries.

Workshop	9-12 Nov., 1987	A decision was taken to hold a 5-day workshop in the last week of March either in Togo or Cameroon.	9-12 Nov., 1987	A workshop was held in Lome, Togo from 20-24 March, 1989.	20-24 March 1989	Forty-three scientists from 15 countries attended. Fifteen scientific papers were presented and discussed, all member countries presented country reports. The Steering Committee was reviewed and regional trials were formulated and requested for.
Long-term training & supplementary funds	9-12 Nov., 1987	A decision was taken that the Network Coordinator should ask member countries to submit supplementary budget that will include long-term training as well as relevant cowpea research activities.	9-12 Nov., 1987	A supplementary budget proposal totalling US $2,682,500.00 was drafted in March,1988 and submitted to the Special Programme for African Agricultural Research (SPAAR) of the World Bank through IITA Headquarters in Ibadan.	March 1988	To date, no support was given by SPAAR.
Allocation of Funds to National Programs.	9-12 Nov., 1987	A decision was taken to allocate funds to Lead Centers and Technology Adopting Centers.	9-12 Nov., 1987	Funds were allocated for 1988 season as follows: Cameroon: $2,000.00 Niger $2,000.00 Nigeria: $4,000.00 Senegal: $3,000.00 All remaining countries in the network received $580.00 each. Funds were sent on request.	May-Nov., 1988	Lead Centers and Technology Adopting Centers were able to carry out smoothly their assigned research activities in 1988.
Regional trials	9-12 Nov., 1987	The following decisions were made with regards to regional trials: i. Scietists wishing to nominate new technology for regional trial should present relevant data in support of the technology during the biennial workshop.	9-12 Nov., 1987	Since 1988 the network has been putting together regional trials on the basis of data presented during the biennial workshop. Such trials were dispatched in 1989 1991.	1988 to date	The work load in terms of amount of technology to be tested by member countries was reduced in favour of technology with high probability of adoption by national programs.

		ii. National programs wishing to test such technologies were advised to do so during the following two years for appraisal of the new technology.					
		iii. Breeders wishing to nominate early genration material for evaluation by Lead Centers were requested to send them to the network Coordinatator who will put up observation nurseries on yearly basis and dispatch them to member countries upon request.					
In-service training for technicians	9-12 Nov., 1987	A decision was taken to organize in-service trining for field technicians from technology adopting Centers.	9-12 Nov., 1987	Ten participants from seven member-countries attended a training on appropriate technology development and transfer at INERA, Kamboinse from 10-24 Sept. 1989. The countries include: Benin, Côte d'Ivoire, Guinea-Bissau, Guinea Conakry, Mali, and Niger.	10-24 Sept., 1989	Improvement of identification and development in member-countries.	
Collaborative research activities	28-31 March 1987	Lead Centers and technology adopting centers are to be assessed continuously on their capacity to develop new technologies.	28-31 March 1988	In March 1989 all national centers were assessed. The five Lead Centers were re-confirmed and a sixth Lead Center, Ghana was added while two associate centers (Benin, and Mali) were established. Also in March 1991 all Lead Centers were reassessed and those given the responsibility in in the previous year were re-confirmed.	March 1989 and March 1991	The assessment of new cultivars for adaptation in the main ecology of the sub-region was improved. Similarly the assessment of cultivars purported to be resistant to *Striga* in the semi-arid zone was improved.	

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Mangement of funds allocated in support of National Cowpea Programs.	28-31 March 1988	It was decided that the SAFGRAD Internationl Coordinator should write to the Directors of Research of member countries to commit the allocated funds to research and not to expect reimburment for any amount spent above the approved sum.	28-31 March 1988	The SAFGRAD International Coordinator wrote member countries and the Network Coordinator sent allocated funds to member countries.	May - Sept. 1988	Funds were provided to the national programs which enabled them to do their assigned research activities.
Work Plans	28-31 March 1988	All member countries should complete and return their work plans to the Network Coordinator before the beginning of the 1988 cropping season.	28-31 March 1988	In March of each year the Lead Centers submit their work plans for review by members of the Steering Committee.	March of each year.	Research activities relevant to the objectives of the network were conducted by Lead Centers and this resulted in the generation of new technologies in 1989 and 1991.
Training	7-11 Nov., 1988	With regards to training of either scientists or field technicians the Committee decided that both types of training should be conducted depending on the need of each individidual country.	7-11 Nov., 1988	Two Seminars for research scientists were organized November 1988 and January 1991. One training session for scientists and technicians from technology adopting centers was organized in September, 1989.	Nov. 1988; Jan. 1991 and Sept. 1989	Research capability of cowpea workers in member countries was enhanced.
Funds alocated in support of national programs.	7-11 Nov., 1988	With regards to using funds allocated to national programs to sponsor the visit of scientists from neighbouring countries to help in establishing regional trials in such weak countries it was decided that funds allocated to national programs should be used in purchasing small equipment and payment of labourers.	7-11 Nov., 1988	Funds allocated to national programs within the network were used to purchase equipment, payment of labour bills, and visit national multilocation trials.	1988 to date	Funds allocated to national programs contributed to the capacity of the national programs not only to carry out research trials but to monitor them at the different locations.

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International trials from IITA	7-11 Nov., 1988	It was decided that a list and description of materials included in International trials by IITA should be sent in advance to national programs to enable them indicate their choice. Few seeds of chosen materials should be sent to Lead Centers to enable them plant about two rows. Promising materials tested by Lead Centers would be proposed for regional testing by member countries.		Since 1989 the Lead Centers, Nigeria, Ghana, Burkina Faso and the Associate Center, Benin have been conducting International trials from IITA and proposing promising varieties for Regional testing during the biennial workshop.	1989 to date	Countries with the southern Guinea sub-humid and Coastal ecologies received reduced number of highly performing and disease resistant cowpea varieties from IITA, Ibadan out of which they selected the best suited to their environment.
Regional trials	20-24 March 1989	The Steering Committee noted from Burkina Faso seven cultivars resistant to *Striga*, six cultivars resistant to aphids, two cultivars resistant to bruchids and four cultivars with multiple disease resistance. From Nigeria, two cultivars that were dual purpose; cultivars resistant to brown blotch were noted. One cultivar combining resistance to bruchids, insect pests, virus and bacterial blight was noted from Senegal. Three extra-early cowpea varieties and two medium maturing varieteis were noted from Niger. All above varieties were decided to be regionally tested within the network.	20-24 March 1989	Six regional trials were designed in 63 sets and dispatched to member countries based on request.	May-June 1989	Feedback was received on 44 out of 63 sets and national scientists were able to select new cultivars for national testing.
IITA new strategy to better serve national programs.	20-24 March 1989	The Committee recommended that IITA should provide necessary resources to strengthen Lead Centers in order to avoid duplication instead of setting up several testing sites within the sub-region.	20-24 March 1989	The strategy was re-discussed in November, 1989 as a result members of the Steering Committee were invited to IITA GLIP Work Plan in Feb/March, 1990. IITA opened up a station in Kano-Nigeria in the Sudan savanna	Nov. 1989 & Feb/ March 1990	With the opening up of Kano sub-station, IITA was in a position to develop varieties suited to the Sudan and northern Guinea. This enabled varieties developed by IITA to be included directedly in breeding nurseries in in 1991.

Supplementary Budget Proposal	6-10 Nov., 1989	The Chairman of the Committee was mandated to write the SAFGRAD International Coordinator to remind him about the recommendation made during the 3rd Steering Committee meeting that he should look for alternative funds since SPAAR alone may not be in a position to provide all the needed funds.	6-10 Nov., 1989	A letter was written to the SAFGRAD International Coordinator by the Chairman of the Steering Committee as requested.	Nov., 1989	The SAFGRAD International Coordinator informed the Steering Committee that the Afrivan Dev. Bank and Organization of African Unity are interested in funding the network. Indeed since 1990, SAFGRAD Coordination Office has been receiving yearly $100,000 for on-farm testing of new improved cultivars.
Adoption of research results by farmers.	6-10 Nov., 1989	The need to have information on the actual hectrage cultivated to new improved varieties in each country was highlighted. The committee decided that a survey should be conducted as soon as possible to obtain all relevant information.	6-10 Nov.,	Questioneers were sent to sent to member countries in late 1990/early 1991 requesting for information on the name of new technology released to farmers after 1987, the area in which they have been used, name of new varieties, seed increase and distribution and names of new varieties adopted by NARS but which are under the various stage of testing after 1987.	Late 1989 to early 1990	Feedback was received from all member-countries for varieties which have been released and those under on-farm testing. Because of logistic reasons the area and production fitures figures were not provided and when provided were unreliable.
Resource and manpower requirements	6-10 Nov. 1989	The Committee observed that the future resource and manpower needs of the network could be obtained from the draft proposal submitted to SPAAR for supplementary funds. The Coordinator was asked to request each country to update the proposal.	6-10 1989	The list of national scientists working on cowpea in the sub-region was updated during the March 1991 workshop held at Niamey, Niger.	March 1991	A total of 66 national scientists are involved in cowpea work in the sub-region, they interact with each other and know much about each other's activities.

Training on use of Computer	6-10 Nov., 1989	The Committee decided that the SAFGRAD Coordination should contract CRSP for assistance in the areas of man-power development and the use of MSTAT Computer programme for data analysis.	6-10 Nov., 1989	Dr. Menyonga wrote a letter to Dr. R.D. Freed of Michigan University about the possibility of organizing an MSTAT training course for the use of computer software. The Michigan State University reacted by offering an opportunity for the Cowpea Coordinator to undergo a 3-week training course on the use of MSTAT software or to purchase the MSTAT software for use of the project. The computer software was bought and the training course was organized in IITA Ibadan in 1991 by maize and cowpea networks.	19-22 July 1991	Twenty scientists and technicians from six countries attended the training course at IITA. Their capability in data analysis was enhanced.
Venue of the March 1990 meeting of the Steering Committee	6-10 Nov., 1989	The Network Coordinator was requested to explore the possibility of holding the March 1990 meeting either in Benin or Burkina Faso	6-10 Nov., 1989	Because of political unrest in Benin in March, 1990, the Steering Committee met in Burkina Faso. However, the November, 1990 meeting of the Committee was held at Cotonou, Republic of Benin.	5-9 Nov. 1990	The administrators and agricultural scientists in Benin were given the opportunity to interact with cowpea network Steering Committee members as well as SAFGRAD officials.
Interaction between IITA scientists and NARS scientists	26-30 March 1990	The Committee decided that IITA scientists should visit Lead Centers. It was also felt that IITA-GLIP HQ in Ibadan should organise a field day for scientists in the coastal area.	26-30 March 1990	Dr. H. Rossel of IITA visited IAR, ABU-Zaria, Nigeria in September, 1990 and Crop Research Institute, Kumasi-Ghana in March 1991. Dr. K. Cardwell also of IITA visited northern Nigeria, Niger Burkina Faso, Togo and Benin in September/October, 1991. A team of four IITA GLIP scientist led by Drs. B.B. Singh & Florini visited Burkina Faso in August, 1992.	1990 to 1992	Interaction between IITA scientists and RENACO scientists was enhanced.

Improving the collaboration of Niger in the network.	26-30 March 1990	The Committee mandated the Chairman and the Network Coordinator to visit Niger in May/June, 1990 to hold discussions with the Director of Research on the non-responsiveness of Niger to the network. A similar decision was taken in March, 1991.	26-30 March 1990	The Chairman of the Steering Committee, Dr. J. Detongnon and the Network Coordinator paid a visit to Niger National Program in June, 1990. A similar visit was paid by Dr. O.O. Olufajo (Chairman) and the Network Coordinator in August, 1991.	June 1990 & Aug. 1991	Research work plan and justification of funds received by Niger from RENACO in 1990 and 1991 were given to the Network Coordinator. There was an improvement in the relationship between Niger and RENACO, but much still has to be done.
Allocation of funds to Associate Centers	26-30 March 1990	The Committee decided that depending on availability of funds the allocation to Benin and Mali (Associate Centers could be increased from $500 to $1000 each to enable them operate as associate centers for *Striga* research and other crucial adaptation research activities.	26-30 March 1990	Mali received $1000 in 1990 and $2000 in 1991 and 1992. Benin has been receiving $1000 every year since 1990.	1990 to date	The capacity of both countries in conducting validation tests in *Striga* resistance was enhanced.
Fund request by national programs	26-30 March 1990	The Network Coordinator was asked to find out why some national programs were not receiving their funds or sending justifications. He should also make the national programs aware that unless justifications are returned, funds will not be released.	26-30	Fund allocation to member countries is made each year by a letter written to all member countries specifying that fund disbursement will be effected only upon receipt of the justification of the previous allocated funds. An attempt was made in June 1990 and August 1991 to find out why justifications were not received from Niger. The reason was found out to be the heavy bureaucracy of the headquarters of the national research system.	1990 to date	The number of countries receiving funds increased because of the justification being sent. With the exception of The Gambia, all countries are receiving their funds.

1990 Cowpea Monitoring tour	5-9 Nov., 1990	After receiving the report of the 1990 cowpea monitoring tour, the Committee took the following decisions: i) There is need for a full-time cowpea agronomist in Burkina national program. ii) IITA should reconsider the termination of its program in Sadore, Niger because this might weaken Niger's national cowpea program. iii) There is a need for a pathologist and an entomologist in the Kano IITA program and also a need for the IAR, Samaru-Nigeria breeder to have the opportunity to work fully with Dr. B.B. Singh in IITA Kano sub-station for one cropping season.	5-9 Nov., 1990	i) Burkina Faso, a junior agronomist has been assigned to grain legume research activities since 1989 and a senior agronomist is being considered in 1992 for assignment to grain legumes. ii) Cowpea research activities in Sadore, Niger are being continued by IITA under the supervision of Dr. B.B. Singh; a cooperation with the cowpea program of INRAN, Niger is also being sort. iii) The IITA Kano substation now has a pathologist and an agronomist. In 1992 the cowpea breeder of Nigeria, Mr. A.A. Zaria visited the IITA Kano sub-station for one week during the cropping season.	1990 to date	The capacity of the national cowpea program to address the problem of cowpea production in the sub-region is being enhanced. The capacity of IITA to address the cowpea production constraints in the semi-arid zone of the sub-region and to better serve the national programs is being enhanced. Similarly the capacity of cowpea breeding program of Nigeria to address production constraints, such as *Striga* resistance and adaptation to drought and disease tolerance is being enhanced.
Establishment of working groups	5-9 Nov. 1990	The Committee recommended that working groups should be established in the following areas: breeding, agronomy, entomology and pathology including *Striga*.	5-9 Nov. 1990	The working groups were initiated during the March, 1991 Workshop at Niamey, Niger. Because of the end of SAFGRAD-II Project in August 1991 and in the absence of a tangible extension period these working groups have not yet become operational.	March 1991	The national scientists are being sensitized on the need to provide a quick solution to common production problems in the sub-region.
Documentation of the achievement of the Network.	5-9 Nov 1990	The Committee recommended that the Network Cordinator should write to national programs to provide a list of varieties that have been released and those that are about to be released and if possible, provide approximate areas of production.	5-9 Nov. 1990	In addition to the questioneers sent by the Network Coordinator in 1990/91, more elaborate tables designed by the SAFGRAD/USAID Impact Assessment Team were sent to national programs in August 1992	1990 1991 & Aug. 1992	Feeback was received from all member countries on questioneers sent to them in 1990/91. Feeback is still being received on the Impact Assessment tables sent to member countries in August 1992.

Assessment of Lead Centers	13-14 March 1991	After a critical review of the report of the Panel set up to assess Lead Centers the Committee decided that: i) The Network Coordinator and Mrs. C. Dabire should visit Cameroon to assess the achievements and ascertain the status of the cowpea storage project. They should also visit northern Ghana to inspect available facilities for storage work. ii) Ghana should continue with the responsibilities assigned to it in 1989, pending the outcome of the proposed visit of the Network Coordidnator and Mrs. Dabire to Cameroon and Ghana.	13-14 March 1991	i) A letter was written to the Director-General of IRA, Cameroon to enquire about the capacity of the cowpea program in Cameroon to conduct cowpea storage research in the absence of Mr. G. N'Toukam who went for Ph.D studies in the USA. The reply was that arrangement was being made for an expatriate cowpea breeder and an entomologist to continue cowpea storage research in Cameroon. ii) Mrs. Dabire and the Network Coordinator visited northern Ghana in August 1991 to assess the capacity of Ghana to conduct cowpea storage research in the Sudan savanna zone. It was found that although The expertise exists the facilities for such research activities were yet to be built and equipment procured.	May and Aug 1991	The Network is still benefiting from research output in cowpea storage from Bean CRSP-Cameroon Collaborative research project.
Training	13-14 March 1991	The Committee recommended that higher degree training should be included in the next phase of SAFGRAD.	13-14 March 1992	This is being brought to the attention of SAFGRAD/USAID Impact Assessment Team for consideration.	7 Oct. 1992	Feeback is being awaited.
Working group	11-14 Nov. 1991	i) In view of the recent outbreak of cowpea diseases in the northern Guinea savanna and the devastating effect of *Striga*, the Committee recommended that the working group of breeders, pathologists, entomologists and *Striga* and *Alectra* specialists be convened latest by March, 1992 to devise ways of tackling the problems and to plan collaborative research.	11-14 Nov., 1991	No action was taken because the SAFGRAD project ended in August 1991. Although it was extended, only limited fund was available for maintenance of collaborative research activities and Regional trials. There was no provision for training activities. This matter is brought to the attention of SAFGRAD/USAID Impact Assessment Team for consideration.		Feedback is being awaited.

ii) Considering the fact that the scientists working on cowpea *Striga* are presently using different methodologies, the Committee recommended that IITA should assist the network by organizing a training workshop on pot culture and related methodologies for scientists working on *Striga* in the sub-region, such training may take place in the Institute for Agricultural Research, Samaru as well as IITA.

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Annex 5 - SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987 - 92

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
Training workshop	Oct. 1987	Striga control workshop Ouagadougou 5-10 Oct.1987	1987	12 scientists and technicians got trained to conduct research on striga		Competence developped in the region to better tackle the striga problem
Training workshop	Sept. 1989	Training course on Agronomy and on-farm testing 9 - 29 Sept. 1989	1989	Representatives of 9 countries participated to improve their skills inconducting agronomy and on-farm tests		Improvement of technology transfert by better tests in agronomy and on-farm
	Oct. 1991 May 1989	Crop protection training		3 scientists worked with the WASIP/Mali specialists to run a research program.		Increased NARS competence in crop protection specialities entomology pathology and weed science

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SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987 - 92

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
Monitoring Tours	1-5 Oct. 1987	Exchange of : - experiences - materials - technologies		Visit of National programs of : - Burkina Faso - ICRISAT/Regional by 11 scientists from 11 countries		Acquaintance with germplasm and technologies available in the region share of experience
	Oct. 1988 - Dec. 1987	"		Visit of National programs of : - Mali - Burkina Faso - Niger by 10 scientists from 7 countries		Know-how, and techniques circulation of gerplasm material
	10-12 Oct. 1991	"		Visit of the Mali National Program and ICRISAT/WASIP by 3 scientists from 3 national programs		

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SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987 - 92

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
Gerplasm conservation		Need to conduct local gerplasm collection in all countries, and organize gerplasm conservation at regional and national levels.		collections of local gerplasm in many countries to save genetic resources		Saving of invaluable genetic resources use of local adapted gerplasm in breeding improved varieties.
Workshops	1985	1. Production of workshop proceeding 2. Formation of the network objectives 3. Regional trials		 3. See separate sheet		In general the workshops brought scientists from NARS together to exchange ideas and discuss their recents results.
	1988	1. Organize agronomy and and on-farm testing in-service training		1. Held in Bamako 9 participants from 9 countries	9-29 Sept. 1989	
		2. Monitoring tour in 1989		2. Held in Mali, Burkina Faso and Niger 7 participants from 7 countries	9-18 Oct. 1989	
		3. Germination tests after howesty regional trials		3. None		

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SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987 - 92

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
		4.To explose possibilities for financial assistance NARS		4. A proposal for funding presented to SPAAR in month 1989	March 1989	
Workshops (continued)	1985	For regional trials		Varietial trials, medum and and hybrid tri storted in 1986. Regional discare nursey added in 1987 and striga trial in 1988. Thus from 1988, five regional trials conducted.		Based on eight responses to a questionnaire develop by WECASORN, 34 varieties and the the hybrid in various levels of use in NARS. There were in the regional trials 38 % being tested in former fields in 3 countries ; 12 % at on-station in two countries ; 3% in demonstration in the country. 3 % in test in the country 15% in pre-release in four countries ; 3% released in the country 59% used in Four varieties are used in solid food in four countries, two varieties used in preparation of beversyes in three countries. Of the 34 varieties, 15 or from NARS

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SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987 - 92

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SUMMARY INDICATORS OF PERFORMANCE AND MANAGEMENT 1987 - 92

ACTIVITY	DATE	MAIN DECISIONS	DATE	MAIN ACTION/OUTPUTS	DATE	MAIN IMPACTS
Collaborative research Projects	1989 1992	Start the highest priority research projects collaboratively with the head NARS		Head bug-screeming technique development - screeming of breeding material		Screeming technique for head bug resistance is made available to breeders in the region (this described in a booklet published by the Network)
				Anthracnose : of sources of resistance in local material		Source of resistance are made available to NARS
				Development of a regional nursery		
				Sorghum-wheat composite flour project. Producted acceptable flour with upto 50% to substition of sorghum. Addition of 0,5% carsaou storch produced breed nurse spacy.		From limital sales, the sorghum wheat flour develop by the project was successful and cost with could benefit low income group.

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Annex 7 Current Research Manpower in Food Grain Improvement in West, Central and Eastern Africa (1990).

Network	Number of NARS	Number of research and level of training.	Percent Research Time		Remarks
			FT	PT	
i) The West and Central Africa Sorghum Research Network	18	Ph.D. 18 Ms.C. 22 B.Sc. 30	38	32	About 25% of qualified researchers are based at Lead NARS.
ii) The West and Central Africa Maize Network	17	Ph.D. 20 M.Sc. 25 B.Sc. 35	60	40	About 50% of the qualified researchers are based at Lead NARS.
iii) The Eastern Africa Sorghum and Millet Network	8	Ph.D. 24 M.Sc. 30 B.Sc. 21	70	30	Close to 35% of researchers are based in two countries.
iv) The West and Central Africa Cowpea Network	17	Ph.D. 20 M.Sc. 30 B.Sc. 25	35	65	Close to 60% of researchers are based at six NARS Centres.

1990

ANALYSIS OF THE PERFORMANCE OF RESEARCH INSTITUTIONS

AU-SAFGRAD

AU-SAFGRAD