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SCIENTIFIC, TECHNICAL AND RESEARCH COMMISSION

(O A U / S T R C)

WEST AND CENTRAL AFRICA COWPEA NETWORK

"Réseau Niébé de l'Afrique Centrale et Occidentale"

(R E N A C O)

REGIONAL APPROACH TO COWPEA RESEARCH IN WEST AND CENTRAL AFRICA

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Name of Project: West and Central Africa Cowpea Network (RENACO)

Date Commenced : March 1987.

I. - BACKGROUND

The SAFGRAD Phase I Cowpea Research mandate in Burkina Faso was successfully completed in 1978-1986.

From the laudable scientific breakthrough of the Phase I research activities, it was unanimously agreed at two Workshops held at Ouagadougou, Burkina Faso from 23-27 February 1987 and from 23-27 March 1987 by national directors of agricultural research and their cowpea scientists of the 18 SAFGRAD member countries as well as Regional and International Research Centers that the SAFGRAD Research Project should be extended into a second phase.

The second phase of the SAFGRAD cowpea research project has a primary objective of boosting the capacity of national scientists to direct cowpea research activities themselves in the subregion in the long run.

In order to prepare the foundation for the eventual take over of cowpea research activities by national scientists, a collective venture on cowpea research was established by SAFGRAD-IITA involving 17 SAFGRAD member countries known as the West and Central Africa Cowpea Collaborative Research Network (RENACO). Cowpea production constraints, research personnel, infrastructure as well as the research strengths and weaknesses of each national programme were presented. The needs, researchable topics and the state of art on cowpea research in Central and West Africa were also enumerated and discussed.

The national directors of research and cowpea scientists were sincere in appraising their individual country's research capacities and they fully endorsed the laudable idea of networking.

They believed that the network exercise was the most feasible solution to tackling cowpea production constraints by sharing scientific information and technologies so developed from the network exercise or by other regional and international agricultural centers.

A Steering Committee comprising of six national cowpea scientists was elected during the workshop. The committee immediately met with responsible authorities of the SAFGRAD Coordination Office (SCO), IITA-GLIP, USAID and the IITA-GLIP seconded Coordinator of the network.

A review of cowpea research and production programmes as well as research infrastructure and personnel of each country was carried out. Common constraints were identified and relatively strong national programmes were given the role of Lead Centers. Researchable topics were assigned to Lead Centers according to their strengths and ecological zones.

The resolutions and decisions taken by the Steering Committee during the March 1987 workshop are summarized as follows:

1) Agro-ecologies

Three agro-ecological zones from north to south were recognized:

1) The Sahel: 200-600 mm rainfall from mid-June to mid-September;
2) Sudan savanna: 600-900 mm rainfal from June to September;
3) Northern Guinea savanna: 900-1200 mm rainfall from June to mid-October.

2) Climatic Constraints

Drought (inadequate, poor distribution and erratic rainfall) and heat (high air and soil temperatures) stresses, and sandblasts due to high wind velocity are major climatic constraints. They are gradually increasing from south to northwards.

3) Biological Constraints

Diseases (scab, brown blotch, Septoria leaf spot, viral diseases, bacterial blight, ashy-stem rot), insect pests (thrips, aphids, bruchids, pod sucking bugs and Maruca pod borers), parasitic weeds (Striga and Alectra).

4) Soil Constraints

Low water retention capacity, low fertility and high soil temperatures.

5) Socio-economic constraints

Poor on farm-testing, inadequate seed production and distribution system and continued cultivation without use of appropriate inputs.

6) Financial Constraints

7) Insufficient number of skilled scientists, technicians and extension personnel

In conclusion, after prioritizing cowpea production constraints and evaluating the capacity of national programmes, the Steering Committee allocated research responsibilities to strong national programmes according to their geographical locations. The Steering Committee also realized that peasant farmers adopt new technologies not necessarily because of better adaptation to the physical environment and high yield, but also consumers preference and requirements (grain type, colour, texture, etc). Therefore, national scientists were urged to pay more attention to these spectifics more than ever before.

II. - NETWORK OBJECTIVES

The primary objective of RENACO is to develop the capacity and initiative of the national cowpea scientists to direct the network themselves by (i) properly identifying cowpea production constraints and (ii) generating through networking in collaboration with IITA-GLIP, the appropriate technologies overcoming the constraints. The purpose of networking is to enable national cowpea programmes of West and Central Africa to pool together their resources to tackle common cowpea production problems in the subregion and to find appropriate solutions for the benefit of their inhabitants. The rationale of networking is based on this very simple but effective adage "United, we stand, Divided, we fall". This becomes more relevant when needs are numerous, and resources are limited.

III.- NETWORK PROGRAMME AND IMPLEMENTATION

Based on the commonality of the constraints and the existence of strong and weak national programmes within the subregion, in order to ensure the cost effectiveness and sustainability of networking, the cowpea network Steering Committee adopted the strategy of assigning technology-development research responsibilities to strong national programmes (Lead Centers) depending on the ecological zone; the technology adaptive research responsibilities being handled by all national programmes, especially the weak ones, of the participating countries, while IITA-GLIP at Ibadan, Nigeria, and its outreach sub-stations in Nigeria and Niger, continue to backstop the activities (research, training, etc) of the network. Varieties developed by IITA are channelled, through Lead Centers, directly or indirectly within the network; directly if varieties were recommended for regional testing after being identified as promising by Lead Centers; and indirectly if they were used in cowpea genetic improvement by Lead Centers.

The cowpea Steering Committee assigned research responsibilities to 6 national programmes, which accepted the role as Lead Centers as follows:

1) Burkina Faso

- Breeding for drought, Striga, insect pests and disease resistance;
- Entomology and pathology (including viral diseases) for the three ecological zones of semi-arid West Africa.

2) Cameroun

- Entomology with emphasis on cowpea storage pest problems.

3) Niger

- Breeding for drought, Striga and Macrophomina disease resistance;
- Agronomic studies (millet-cowpea intercropping) and cowpea pathology (Macrophomina spp) for the Sahelian zones.

4) Nigeria

- Breeding for drought, Striga, Alectra, insect pests and disease resistance;
- Cowpea agronomy, pathology (including scab, brown blotch, Septoria leaf spot, Striga and Alectra) and entomology for the three ecological zones of West Africa with emphasis on mode of inheritance of diseases, Striga and Alectra resistance in cowpea.

5) Senegal

- Breeding for drought, insect pests and disease resistance;
- Cowpea entomology for the Sahelo-Sudanian zones.

6) Ghana

- Breeding for adaptation to transition zones;
- Cowpea entomology for transition zones.

Owing to variations in Striga strains, two countries (Benin and Mali) were assigned the responsibilities of selecting and testing for Striga resistance in 1990.

IV.- SUMMARY OF ACHIEVEMENTS OF THE COWPEA NETWORK

1) Strengthening national research system

As at October 30, 1990, RENACO Lead Centers were conducting activities in all aspects of cowpea research. While capitalizing on multiple insect pests and disease resistance developed by IITA-GLIP, national scientists of Burkina Faso are also attempting to incorporate them into agronomic backgrounds, acceptable to peasant farmers. Their ultimate goal is to have drought, multiple disease, Striga, aphids and other insect pest resistant cowpea varieties. Nigerian scientists are attempting to identify new sources of Striga and Alectra tolerance and mode of inheritance which is a commendable step towards an initiation of a breed ing programme for resistance to these parasitic weeds. Scientists from Niger are looking for new and stable sources of Striga resistance. Whereas, scientists in Mali are studying the virulence of Striga gesnerioides strains including the ones parasitizing weeds such as Ipomeas sp.. Scientists in Cameroon are working on cowpea storage methods acceptable to peasant farmers.

2) Regional trials

In 1987, the biennial regional testing (1987-88) consisted of a total of 7 trials:

1) Drought resistance
2) Striga resistance
3) Sorghum-cowpea intercropping
4) Millet-cowpea intercropping
5) Maize-cowpea relay cropping
6) Observation nursery
7) Minimum insecticide

in 81 sets. The inputs of the trials were obtained from IITA-SAFGRAD resident research in Ouagadougou and from IITA headquarters, Ibadan, Nigeria. They were dispatched to member countries as shown in Table 1; a total of 78 feedbacks was received from participating countries by the end of 1988 (Table 2).

In 1989, the biennial regional testing (1989-90) consisted again of a total of 7 trials:

1) Resistance to aphids
2) Resistance to bruchids
3) Resistance to virus
4) Resistance to Striga
5) Adaptation to transition zones
6) Adaptation to Sudano-Sahelian zones
7) Adaptation to Northern-Guinea zones

in 53 sets. Lines included in the 1989 trials were developed by Burkina Faso, Niger, Nigeria, Ghana and IITA-GLIP. Trials were dispatched to member countries as shown on Table 3; and a total of 35 feedbacks was received from participating countries (Table 4).

TABLE 1. COWPEA REGIONAL TRIALS DISPATCHED TO MEMBER COUNTRIES IN 1987

Country	NUMBER OF TRIALS REQUESTED							
	Drought resistance trial	Striga resistance trial	Intercropping: sorghum/ cowpea	Intercropping: millet/ cowpea	Maize/ Cowpea Relay cropping	Observation nursery	Minimum insecticide trial	Total
Benin	1	-	2	-	-	1	2	6
Burkina Faso	1	1	-	-	-	1	-	3
Cameroon	-	-	1	-	1	-	1	3
Cape Verde	-	-	-	-	-	1	-	1
Central African Republic	-	-	-	-	-	(2)-1	-	1
Tchad	2	-	-	2	1	2	-	7
The Gambia	1	-	2	2	-	1	-	6
Ghana	1	1	1	-	-	-	1	4
Guinea Bissau	1	-	1	-	-	1	-	3
Guinea Conakry	-	-	1	-	2	(3)-2	1	5
Côte d'Ivoire	-	-	-	-	-	1	-	1
Mali	2	2	-	3	-	1	-	8
Mauritania	-	-	-	-	-	-	-	0
Niger	3	3	-	-	-	(3)-1	2	10
Nigeria	2	3	1	3	1	1	2	13
Senegal	2	-	1	1	-	(3)-2	2	7
Sierra Leone	-	-	-	-	-	-	-	0
Togo	-	-	2	-	1	-	-	3
Total	16	10	12	11	6	15	11	81

TABLE 2. FEEDBACKS RECEIVED FROM MEMBER COUNTRIES FOR THE 1987-88 REGIONAL TRIALS

Country	NAME OF TRIALS									
	Drought resistance trial	Striga resistance trial	Virus resistance trial	Intercropping		Maize/ Cowpea Relay crop	Bruchids resistance trial	Aphids resistance trial	Minimum insecticide trial	Total
				sorghum/ cowpea	millet/ cowpea					
Benin	2	-	1	1	-	-	1	1	-	6
Burkina Faso	3	3	1	2	-	2	1	1	3	16
Cameroon	-	1	-	1	-	-	-	-	1	3
Central African Republic	-	-	-	-	-	-	-	-	-	0
Cape Verde	-	-	-	-	-	-	-	1	-	1
Tchad	2	-	-	-	-	1	-	-	-	3
The Gambia	1	-	-	-	-	-	-	-	1	2
Ghana	2	1	-	2	-	-	1	1	1	8
Guinea Bissau	1	-	-	-	-	-	-	-	-	1
Guinea Conakry	-	-	-	1	-	2	-	-	1	4
Côte d'Ivoire	-	-	-	-	-	-	-	-	-	0
Mali	2	2	-	-	-	-	-	-	-	4
Mauritania	3	-	-	-	-	-	2	2	-	7
Niger	3	3	-	-	-	-	-	-	1	7
Nigeria	2	3	-	-	-	1	-	-	1	7
Senegal	2	-	-	-	-	-	-	-	-	2
Sierra Leone	-	-	-	-	-	-	-	-	-	0
Togo	-	-	2	2	-	1	1	1	-	7
Total	23	13	4	9	0	7	6	7	9	78

TABLE 3. COWPEA REGIONAL TRIALS DISPATCHED TO MEMBER COUNTRIES IN 1989

Country	NAME OF TRIAL							Total
	Resistance to				Adaptation to			
	Aphids	Bruchids	Virus	Striga	Transition zone	Sudano-Sahelian zone	Northern Guinea zone	
Benin	-	-	-	1	-	-	1	2
Burkina Faso	1	1	1	1	-	-	1	5
Cameroon	-	1	1	-	-	1	1	4
Cape Verde	1	-	-	-	-	-	-	1
Central African Republic	-	-	-	-	-	-	-	0
Côte d'Ivoire	-	-	-	-	-	-	1	1
The Gambia	-	-	-	-	-	-	1	1
Ghana	-	-	-	-	-	-	1	1
Guinea Bissau	1	1	-	-	-	1	-	3
Guinea Conakry	2	4	1	-	4	-	-	11
Niger	1	-	1	1	-	1	-	4
Nigeria	1	1	1	1	-	1	1	6
Mali	-	1	-	1	-	-	-	2
Mauritania	-	1	-	-	-	1	-	2
Senegal	-	-	-	1	-	-	-	1
Tchad	1	1	1	1	-	1	-	5
Northern Togo	-	-	1	-	-	-	1	2
Southern Togo	-	1	-	-	1	-	-	2
Total	8	12	7	7	5	6	8	53

TABLE 4. FEEDBACKS RECEIVED FROM MEMBER COUNTRIES FOR THE 1989 REGIONAL COWPEA TRIALS

Country	NAME OF TRIAL								Total
	Resistance to					Adaptation to			
	Aphids	Bruchids	Virus	Drought	*Striga*	Transition zone	Sudano-Sahelian zone	Northern Guinea zone	
Benin	-	-	-	-	-	-	-	1	1
Burkina Faso	1	1	-	-	-	-	1	1	4
Cameroon	-	-	-	-	-	-	1	1	2
Cape Verde	-	-	-	-	-	-	-	-	0
Central African Republic	-	-	-	-	-	-	-	-	0
Côte d'Ivoire	-	-	-	-	-	-	-	1	1
The Gambia	-	-	-	-	-	-	-	1	1
Ghana	-	-	-	-	-	-	-	1	1
Guinea Bissau	-	-	-	-	-	-	-	-	0
Guinea Conakry	1	1	-	-	-	2	-	-	4
Mali	-	1	-	-	1	-	-	-	2
Mauritania	-	1	-	1	1	-	-	-	3
Niger	-	-	-	-	-	-	1	-	1
Nigeria	1	1	-	-	1	-	-	1	4
Senegal	-	-	-	-	-	-	-	-	0
Tchad	1	1	1	-	1	-	1	-	5
Togo	2	1	1	-	-	1	-	1	6
Total	6	7	2	1	4	3	4	8	35

3) On-farm testing

Although the network is not directly involved in multilocational trials and on-farm testings; it is significant that through the network efforts (regional trials included), there have been renewed interests in cowpea research activities in all participating countries. The following cultivars obtained through RENACO activities have been released or are about to be released in the underlisted member countries (Table 5).

4) Training of National Scientists

With the ultimate goal of boosting the capacity and initiative of national cowpea scientists to identify cowpea production constraints and develop or identify appropriate technologies to overcome such constraints, following training activities are being carried out.

Monitoring tour:

The objective of the monitoring tour is to enable scientists from Technology Adopting Centers, Lead Centers and IITA-GLIP to interact on the field with regard to production constraints, research methodologies and appropriate new technologies. A monitoring tour was organised in 1988 to IITA-Ibadan, northern Nigeria, Niger and Burkina Faso. Six national scientists from Niger, Burkina Faso, Senegal, Cape Verde and Guinea Bissau participated (Table 6). In 1990, the same afore-mentioned countries were toured by eight scientists from Benin, Burkina Faso, Cameroon, The Gambia, Ghana, Niger and Nigeria (Table 7).

Short term in-service training for scientists:

The objective is the same as the monitoring tour, but discussion are held in classrooms and laboratories with lectures given by national as well international scientists.

A seminar was organised in November 1988 at IITA, Ibadan for 12 scientists from Lead Centers and Ghana (Table 8). The scientists included breeders, agronomists, pathologists and entomologists; the subject discussed centered mainly on appropriate research methodologies.

A group training course was organized in 1989 at Kamboinse/Ouagadougou in cooperation with the national cowpea programme of Burkina Faso. Ten scientists and technicians from Côte d'Ivoire, Niger, Guinea Conakry, Mali, Benin, Guinea Bissau and Tchad participated (Table 9). The subject matters centered mainly on technology development and transfer.

TABLE 5. CULTIVARS RELEASED OR ABOUT TO BE RELEASED FROM THE NETWORK EFFORTS.

Country	Cultivars		Area of adaptation
	Released	To be released	
Benin	Vita-5	IT82E-32	Coastal zone
		IT81D-1137	Coastal zone
		TVx 1850-01F	Transition zone
Burkina Faso	Gorom L. (Suvita-2)	KVx61-1	Sahel
		KVx396-4-4	Sahel Sud. zone
	KN-1	KVx396-4-2	Sudano-Guinean zone
Cameroon	Br1 (IT81D-985)	IT81D-994	Sudano-Guinean zone
Ghana	Asonteme (IT82E-32)		Transition zone
	Valenga (IT82E-16)		Guinea savanna zone
Guinea Bissau	IT82E-9		Guinea savanna zone,
Mali	Gorom L. (Suvita-2)	KVx61-1	Sahel
	TN88-63	KVx61-74	Sahelo-Sudanian
	KN-1		Sudano-Guinea
Gambia	IT81D-994	-	Sudano-Guinean
Niger		KVx100-2	
		KVx30-309-6G	Sudano-Sahelian zone
		KVx61-74	
		TN27-80	
Nigeria	Sampea-7		Sudano-Guinean
	(IAR-48)		savanna zone
	(IAR-339-1)		
		TVx3236	Sudano-Guinea
		IT81D-994	savanna zone
Senegal		IS86-275	Sahelo-Sudanian zone
		B 89	
Tchad	IT81D-994	TN88-63	Sudano-Sahelian zone
	KN-1		
	TVx3236		
Togo	Vitoco	IT81D-1137	Coastal, transition and
	(IT81D-985)		Guinea savanna zones
	(Vita-5)		
Central African Republic	KN-1		Transition and
	TVx 1948-01F		Guinea savanna zones

TABLE 6. LIST OF THE 1988 COWPEA MONITORING TOUR PARTICIPANTS.

Country	Name of Scientist	Address
BURKINA FASO	1. Dr. Sérémé Paco	Cowpea Pathologist CRAF, 01 B.P. 476 Ouagadougou 01
CAPE VERDE	2. Mr. Carlos Silva	Cowpea Agronomist INIA, B.P. 50, Praia
GUINEA BISSAU	3. Mr. Malam Sadjo	Cowpea Agronomist MDR/DEPA, C.P. 71 Bissau
GUINEA CONAKRY	4. Dr. F. L. Guilavogui	Cowpea Entomologist IRAG-MEN, B.P. 1003 Conakry
NIGER	5. Mr. Adamou Moutari	Cowpea Breeder INRAN, B.P. 429 Niamey
SENEGAL	6. Mr. Cissé Ndiaga	Cowpea Breeder ISRA/CNRA, B.P. 53 Bambey

TABLE 7. LIST OF THE 1990 COWPEA MONITORING TOUR PARTICIPANTS

Country	Name of Scientist	Address
BENIN	1. Dr. J. Detongnon,	Cowpea Breeder SRCV-Niaouli B.P. 3, ATTOGON
BURKINA FASO	2. Dr. C. Dabire (Mrs)	Cowpea Entomologist CRAF, 01 B.P. 476 OUAGADOUGOU 01
	3. Mr. J. Ouedraogo	Cowpea Breeder INERA, 01 B.P. 7192 OUAGADOUGOU 01
CAMEROON	4. Mr. G. N'Toukam	Cowpea Entomologist IRA, B.P. 33, MAROUA
GAMBIA	5. Mr. M. Bojang	Cowpea Agronomist Yundum Agric. Research Station P.O. Box 739, Yundum
GHANA	6. Dr. M.O. Akyaw	Cowpea Entomologist Crops Research Institute P.O. Box 3785 Kumasi
NIGER	7. Dr. S.D. Maiga	Cowpea Entomologist INRAN, B.P. 429, Niamey
NIGERIA	8. Mr. A.A. Zaria	Cowpea Breeder IAR/ABU, PMB 1044, Zaria
	9. Dr. O.O. Olufajo	Cowpea Agronomist IAR/ABU, PMB 1044, Zaria

TABLE 8. LIST OF THE PARTICIPANTS TO THE RENACO'S SEMINAR HELD IN NOVEMBER 1988 AT IITA, IBADAN, NIGERIA

Country	Name of Scientist	Address
BURKINA FASO	Dr. C. DABIRE (Mrs)	Cowpea Entomologist, CRAF, 01 B.P. 476, Ouagadougou 01,
	Mr. OUEDRAOGO J.	Cowpea Breeder, INERA, 01 B.P. 7192, Ouagadougou 01
CAMEROON	Mr. NTOUKAM, G.	Cowpea Entomologist B.P. 33, Maroua,
GHANA	Dr. OWUSU-AKYAW, M.	Cowpea Entomologist Crops Research Institute P.O.Box 3785, Kumasi,
NIGER	Dr. ADAM Toudou	Cowpea Pathologist, INRAN, B.P 429, Niamey
	Mr. HAMMA Hassane	Cowpea Pathologist, INRAN, B.P. 429, Niamey
NIGERIA	Prof. LELEJI, O.I.	Cowpea Breeder, IAR/ABU, PMB 1044, Zaria
	Dr. AMATOBI, A. M.	Cowpea Breeder, IAR/ABU, Kano
	Prof. EMECHEBE, A. M.	Cowpea Pathologist IAR/ABU, PMB 1044, Zaria
	Mr. ODION, C. E.	Cowpea Agronomist, IAR/ABU, Kano
SENEGAL	Dr. BAL, A.B.	Cowpea Entomologist, CNRA, B.P. 53, Bambey
	Mr. NDIAGA C.	Cowpea Breeder ISRA/CNRA, B.P. 55, Bambey

TABLE 9. LIST OF THE PARTICIPANTS TO THE RENACO'S GROUP TRAINING COURSE AT THE INERA RESEARCH STATION, KAMBOINSE/OUAGADOUGOU IN 1989.

Country	Name of Scientist	Address
BENIN	1. Dr. J. Detongnon	Cowpea Breeder Station RCV-Niaouli, B.P. 3 ATTOGON
COTE D'IVOIRE	2. Mr. Adou Amalaman	Cowpea Agronomist IDESSA-DCV, BP 635, Bouake 01
GUINEA BISSAU	3. Mr. Abu Biai	Cowpea Agronomist M.D.R.E Agricultura C.P. 71, Bissau- DEPA/CENEMAC, Contuboel
GUINEA CONAKRY	4. Dr. F.L. Guilavogui	Cowpea Entomologist IRAG-MEN B.P. 1003, Conakry
MALI	5. Mr. Kodio Ondié	Cowpea Breeder IER/DRA/SRCVO, B.P. 438, Sotuba
	6. Mme D. N. Yaro	Cowpea Entomologist, IER/DRA/SRCVO, B.P. 438, Sotuba
	7. Mr. D. Sogodogo	Cowpea Agronomist IER/DRA/SRCVO B.P. 438, Sotuba
	8. Mr. S.O. Katilé	Cowpea Pathologist, IER/DRA/SRCVO B.P. 438, Sotuba
NIGER	9. Mr. A. Moutari	Cowpea Breeder INRAN, B.P. 429, Niamey,
TCHAD	10. Mr. Ouéitar Gam	Cowpea Agronomist Projet CHD82/003/PNUD/FAO B.P. 101, Gassi

Workshop: Scientific information and technology exchange:

During the 1989 joint maize-cowpea workshop held in Lome, Togo, in March 1989, a day and a half was dedicated to scientific communication. Thirty original scientific papers by maize and cowpea national and international scientists were presented and discussed during the workshop. All aspects of maize and cowpea research activities were covered. Also scientists had the opportunity to interact with one another for five days. Forty-three cowpea scientists attended the Lome workshop (Table 10).

The proceedings of the workshop were published in two volumes - technical papers and country reports.

National and IITA-GLIP cowpea research activities were presented and discussed by all participants.

Visits to national programmes:

Seasonal visits to national programmes by either the Steering Committee members, Lead Centers Staff, IITA-GLIP scientists or the Cowpea Network Coordinator offered an informal on-the-spot training opportunity to national scientists and support staff by enabling them to discuss cowpea production technologies.

The following countries were visited by either the Network Coordinator or RENACO national scientists or IITA-GLIP scientists:

- In 1987: Burkina Faso, Guinea Conakry, Mali, Mauritania, Niger, Nigeria, Senegal and Togo;
- In 1988: Burkina Faso, Cameroon, Cape Verde, Niger, Nigeria, Senegal and Togo;
- In 1989: Benin, Burkina Faso, Côte d'Ivoire, Ghana, Guinea Bissau, Mali, Niger, Nigeria and Togo;
- In 1990: Burkina Faso, Cape Verde, Central African Republic, The Gambia, Mali, Niger, Nigeria, Senegal, Tchad.

TABLE 10. LIST OF NATIONAL AND INTERNATIONAL COWPEA SCIENTISTS WHO ATTENDED THE 1989 WORKSHOP AT LOME, TOGO, IN MARCH 1989.

Country	Name of Scientist	Address
BENIN	1. Jean DETONGNON	Cowpea Breeder, SRCV-Niaouli, B.P.3 ATTOGON
BURKINA FASO	2. C. DABIRE (Mrs)	Cowpea Entomologist, CRAF, 01 B.P. 476, Ouagadougou 01
	3. Jeremy OUEDRAOGO	Cowpea Breeder, INERA, 01 BP 7192, Ouagadougou 01,
	4. Michel SEDOGO	Cowpea Agronomist, INERA, 01 B.P.7192, Ouagadougou 01,
CAMEROON	5. Moffi TA'AMA	Cowpea Entomologist IRA/USAID/CRSP, B.P. 33, Maroua
CAPE VERDE	6. C. E. P. SILVA	Cowpea Agronomist, MDR-DEPA B.P. 50, Praia
COTE D'IVOIRE	7. Adou AMALAMAN	Cowpea Agronomist IDESSA, B.P 635, Bouake 01,
GAMBIA	8. Musa BOJANG	Cowpea Agronomist Dept. of Agric. Research Yundum Research Station P.O. Box 739, Yundum
GHANA	9. Asafu AGYEI	Cowpea Agronomist GGDP/CRI, Box 3785, Kumasi
	10. G. A. AMANKWA	Cowpea Breeder, GGDP/CRI, Box 3785, Kumasi
	11. Thimoty KIPO	Crops Research Institute P.O Box 3785, Kumasi
	12. A. A. MAHAMA	Cowpea Breeder, CRI/NAES Box 52 or 483, Tamale
	13. M. O. AKYAW	Cowpea Entomologist CRI, Box 3785, Kumasi
GUINEA BISSAU	14. I. MIRANDA (Mrs)	Cowpea Agronomist MDR/DEPA, C.P. 71, Bissau
GUINEA CONAKRY	15. F.L. GUILAVOGUI	Cowpea Entomologist IRAG. B.P. 1003, Conakry
MALI	16. D. SOGODOGO	Cowpea Agronomist, ICRISAT B.P. 34, Bamako
	17. B.A. KANTE (Mrs)	Seed Technologist IER, BP 438, Bamako
	18. Ondie KODIO	Cowpea Breeder IER, B.P. 438, Bamako

TABLE 10 (CONT'D-1). LIST OF NATIONAL AND INTERNATIONAL COWPEA SCIENTISTS WHO ATTENDED THE 1989 WORKSHOP AT LOME, TOGO, IN MARCH 1989.

Country	Name of Scientist	Address
MAURITANIA	19. R'Chid SIDI	Agronomist CNRADA, BP 22, Kaedi,
NIGER	20. Toudou ADAM	Cowpea Pathologist Faculté d'Agronomie B.P. 10960, Niamey
	21. Hassane HAMMA	Cowpea Pathologist INRAN, BP 240, Maradi,
	22. Alzouma INEZDANE	Cowpea Entomologist Université de Niamey F.S. Département de Biologie B.P. 10662, Niamey
	23. Adamou MOUTARI	Cowpea Breeder INRAN, B.P. 429, Niamey,
NIGERIA	24. J.K. ADU	Microbiologist, IAR/ABU, PMB 1044, Zaria
	25. C.I. AMATOBI	Cowpea Entomologist Agricultural Research Station, IAR, P.O. Box 1062, Kano,
	26. K.A. ELEMO	Agronomist IAR/ABU, PMB 1044, Zaria
	27. Prof. A.M. Emechebe	Cowpea Pathologist IAR/ABU, PMB 1044, Zaria
	28. O.O. OLUFAJO	Cowpea Agronomist, IAR/ABU, PMB 1044, Zaria
SENEGAL	29. N. CISSE	Cowpea Breeder ISRA, B.P. 55, Bambey
TCHAD	30. C. D. BICHARA	Cowpea Agronomist, Station de Gassi, BP 441, N'Djamena
TOGO	31. C. A. AGBOBLI	D.R.A., B.P. 2318, Lome,
	32. A. DUYIBOE (Mrs)	Cowpea Agronomist D.R.A. B.P. 2318, Lomé
	33. Mr. Toky PAYARO	Cowpea Agronomist RPAA, B.P. 218, Kara,
IITA, IBADAN	34. E.F. DEGANUS	Administrator, ICP, IITA, PMB, 5320 Ibadan,
	35. L.E.N. JACKAI	Cowpea Entomologist IITA, PMB 5320, Ibadan
	36. G.O. MYERS	Cowpea Breeder, GLIP IITA, PMB 5320, Ibadan

TABLE 10 (CONT'D-2). LIST OF NATIONAL AND INTERNATIONAL COWPEA SCIENTISTS WHO ATTENDED THE 1989 WORKSHOP AT LOME, TOGO, IN MARCH 1989.

Country	Name of Scientist	Address
	37. B. R. NTARE	Cowpea Breeder, IITA/ICRISAT Sahelian Center, BP 12404, Niamey
	38. S.R. SINGH	Cowpea Entomologist Director, GLIP, PMB 5320, Ibadan
	39. Joseph Benah SUH	Cowpea Entomologist IITA, PMB 5320, Ibadan
USAID	40. Gerbrand KINGMA	Breeder, C/O 01 BP 1783, USAID/SAFGRAD, Ouagadougou 01
	41. James C. SENTZ	Breeder USAID/IITA PMB 5320, Ibadan
SAFGRAD	42. Taye BEZUNEH	Physiologist, Director of Research, OAU/STRC, 01 B.P. 1783, Ouagadougou 01,
	43. Nyanguila MULEBA	Cowpea Agronomist RENACO Coordinator IITA/SAFGRAD,01 BP 1495, Ouagadougou 01

5) Network Impact

The impact of the network can be viewed on several grounds as follows:

- Management of research activities: A strong link has been established between SAFGRAD Coordination Office (SCO) and the Directors of Research of participating countries. The Council of Directors meet to review network activities and to establish guidelines to be followed or implemented by the networks. Through an Oversight Committee (emanating from the Council of Directors),the Council monitors and oversees the activities of networks. The Oversight Committee meets once a year. Thus, the Directors have been very active and responsive to all network activities (Steering Committee meetings, monitoring tours, workshops, training and regional trials) by either encouraging the contribution and the participation of their scientists and/or hosting meetings. In many countries, steps are underway towards specializing some scientists in cowpea research work (as opposed to a scientist or group of scientists working on several crops). It should be noted that without the full cooperation of the Directors of research, the success of the network in any form would not have been possible.

- Cowpea research: The greatest impact of the cowpea network is the renewed interests and total commitment of national programs to cowpea research activities. Sixty national scientists throughout West and Central Africa are not only enthusiastic in carrying out their respective responsibilities, but are also very keen in collaborating with one another within the network area and IITA in developing appropriate technologies meeting farmers' needs and requirements. Thus, the linguistic barrier that has always separated anglophone and francophone countries from learning from one another has been broken!

Within each country, an unprecedented strong link has been established between cowpea scientists and peasant farmers through the farming system research scientists and extension workers. This has resulted in the conduct of multilocational trials and on-farm testings and release of new cultivars (Table 5 and Appendix 2) with several others in the pipe line for release (Appendix 3).

New varieties have been developed with the following attributes:

. Striga resistant varieties: The varieties shown on Table 11 were identified to be resistant to Striga gesnerioides and are being incorporated in good agronomic background.

TABLE 11. COWPEA VARIETIES RESISTANT TO STRIGA IN WEST AND CENTRAL AFRICA

Name of variety	Origin	Pedigree	Country for which it is resistant to Striga	National programs incorporating it in good agronomic background
- Gorom Local (Suvita-2)	Burkina Faso	A selection from a landrace	Burkina Faso, Mali Senegal	Burkina Faso, Mali
- B301	Botswana	-	Burkina Faso, Mali Senegal, Niger, Nigeria, Benin	Burkina Fasl, Mali, Niger, Nigeria
- IT82D-849	IITA-Ibadan	-	Burkina Faso, Mali, Senegal, Niger, Nigeria, Benin	Burkina Faso
- TN93-80	Niger	Landrace	Burkina Faso, Mali, Senegal, Niger, Nigeria	-
- TN121-80	Niger	Landrace	Burkina Faso, Mali, Senegal, Niger, Nigeria	-
- KVx61-1	Burkina Faso	-	Burkina Faso, Mali	Burkina Faso
- KVx61-74	Burkina Faso	-	Burkina Faso, Mali	Burkina Faso
- IT81D-994	IITA-Ibadan	-	Burkina Faso, Nigeria	-

. Drought resistant varieties:

- Gorm Local (SUVITA-2) (Burkina Faso)
- 58-57 (Senegal)
- TN88-63 (Niger)
- KVx 30-309-6G (Burkina Faso)
- KVx 396-4 (Burkina Faso)
- IS86-275 (Senegal)

. Varieties adapted to drought and excess moisture

- KVx 398-18 and KVx 396-4 (Burkina Faso)

. Aphids resistant varieties

- IT82E-25, IT83S-742-2, IT85D-3577 (IITA, Ibadan)

. Bruchid resistant varieties

- IT84S-275-9, KVx 30-6467-5-10K, IT84S-2246 (IITA, Ibadan and Burkina Faso)

In conclusion, the impact of the Network on agricultural production and development will largely depend on the extent to which technologies developed by RENACO Lead and International Agricultural Research Centers are transferred to local farmers.

Technology transfer does not simply mean moving technologies, say, from Point A (Experiment Station) to Point B (Farmers' fields). It also includes the adoption of the technologies by farmers. Therefore, such technologies must be proven to be more profitable and meeting the needs and requirements of the targeted farmers. To achieve this, scientists must, therefore, familiarize themselves with the problems and contrainsts confronting farmers, so that they can design the appropriate research methodologies for the development of the most efficient and beneficial technologies for farmers immediate use.

Due to the longtime neglect by policy makers, agricultural research in West and Central Africa has not been geared specifically to meeting the needs and requirements of peasant farmers. In order to remedy this situation, the SAFGRAD West and Central African Cowpea Network underlined this point as one of its top priority research effort since its inception in March, 1987. Consequently, Workshops, monitoring tours, Seminars and other training activities have been regularly carried out with the view of identifying the basic constraints limiting cowpea production and the best ways to go about solving them.

To this effect, five RENACO Lead Centres were identified in 1987 and became fully and actively operational in 1988. A sixth Lead Center was added in 1989. IITA core activities, which have been redeployed at two sub-stations located at strategic points: Niamey, Niger in the Sahel (in collaboration with ICRISAT) and Kano, Nigeria in the Sudan savanna (in collaboration with the Institute for Agricultural Research (IAR)), offer technical

backstopping for the conduct of relevant research and technology development, etc., for the interest of the semi-arid West and Central African region. It is gratifying to note that such technologies were put out for regional testing in 1989 and have been reported in the 1989-90 regionl trial preliminary results to be of outstanding performance.

With further efforts and investment on training activities, greater and relevant research achievements shall be obtained and transferrable technologies shall be developed for the enhancement of increased cowpea productivity and production in the not-too-distant future.

V. - FUTURE THRUST OF NETWORK PROGRAM AND AREAS OF WHICH FINANCIAL SUPPORT IS REQUIRED

Besides drought, heat, Striga, Alectra and disease resistance or tolerance, cowpea research in West and Central Africa has a long way to go. The use of chemical poisons in controlling insect pests in order to incerease cowpea yield from 200-300 kg/ha to 1000-1500 kg/ha is not a viable option for the generally poor African farmer.

The African economy is not sound enough to accept the massive use of chemical products in its agricultural production system. African scientists are therefore, confronted with the chanllenge of finding relatively cheap ways requiring minimum or no input. With this challenge, the most feasible approach is to embark on a mass breeding program, incorporating all genes and conferring resistance or tolerance to all major physical, chemical and biological cowpea production constraints in good agronomic backgrounds. The success of this minimum input strategy will no doubt boost cowpea yield of 600-1000 kg/ha in the near future.

With the ever increasing African population and given the importance of cowpea diet (supplies about 50% of the needed proteins) in low income African families, every effort must be made to up-grade cowpea production in the next 5-10 years. This dream can only come true if each national program is able to put in place a multidisciplinary team of cowpea scientists comprising a breeder, an agronomist, a pathologist, an entomologist and a social scientist. Since most national programs, perhaps with the exception of Nigeria and Ghana, do not have this facility, training effort cannot be neglected in the network program of activities.

A P P E N D I X - 1

LIST OF NATIONAL COWPEA SCIENTISTS - RENACO

Country/ Name of Scientist	Qualification	Crops Research Areas	Time spent on cowpea (%)
BENIN			
1. Jean Detongnon	Cowpea Breeder (Ph.D)	Cowpea breeding	100
2. Moustapha Adamou	Soil Scientist (Ing. Agr)	Cowpea agronomy	40
3. Kouessi Aihou	Agro-chemist (Ing. Agr)	Cowpea agronomy	30
4. David Arodokoun	Entomologist (Ing. Agr)	Cowpea entomology	30
BURKINA FASO:			
5. Issa Drabo	Cowpea Breeder (M.Sc)	(On-Ph.D study leave)	100
6. Clementine Dabire	Cowpea Entomologist (Dr. 3eme C.)	Cowpea entomology	100
7. Jeremy Ouedraogo	Cowpea Breeder (Ing. Agr)	Cowpea breeding	100
8. Paco Sereme	Phytopathologist (Dr./Ing)	Cowpea pathology	30
9. Gnissa Konate	Virologist (Dr. D'Etat)	Cowpea virology	40
CAMEROON			
10. Georges Ntoukam	Entomologist (M.Sc)	Cowpea entomology	100
11. Chevalier Endondo	Agronomist (Ing. agr)	(On-M.Sc study leave)	100
CAPE VERDE:			
12. Carlos Silva	Agronomist/Breeder (B.Sc)	Cowpea agronomy/ breeding	40
COTE D'IVOIRE:			
13. Adou Amalaman	Agronomist (Diploma)	Cowpea agronomy	100
THE GAMBIA:			
14. Musa Bojang	Agronomist (B.Sc)	Cowpea agronomy	100
GHANA:			
NYANKPALA STATION			
15. K.O. Marfo	Legume Breeder	Ph.D candidate	100
16. M.A. Assibi	Legume Breeder (B.Sc)	(On-M.Sc study leave)	
17. P.B. Tanzubil	Entomologist (M.Sc)	Cowpea entomology	100

A P P E N D I X. - 1 (CONT'D-1):

LISTE OF NATIONAL COWPEA SCIENTIST - RENACO

Country/ Name of Scientist	Qualification	Crops Research Areas	Time spent on cowpea (%)
KWADASSO/KUMASI STATION			
18. B. Asafu Agyei	Legume Breeder	(On study leave)	
19. G.A. Amankwa	Legume Breeder (M.Sc)	Cowpea breeding	100
20. Stella Ennin	Agronomist	(On-M.Sc study leave)	
21. M.O. Akyaw	Entomologist (Ph.D)	Cowpea entomology	100
22. J.K. Twumasi	Pathologist (Ph.D)	Cowpea pathology	-
23. V.J. Affun	Entomologist (M.Sc)	Cowpea entomology	-
24. J.N.A. Agyei	Agronomist (M.Sc)	Cowpea agronomy	50
GUINEE BISSAU			
25. Abu Biai	Agronomist (Diploma)	Cowpea agronomy	100
GUINEA CONAKRY			
26. F.L. Guilavogui	Entomologist (Ph.D)	Cowpea entomology	100
MALI			
27. Ondie Kodio	Cowpea breeder (Ing. Agr)	(On-M.Sc study leave)	100
28. Mamadou Toure	Cowpea Breeder (Ing. Agr)	(On-Ph.D study leave)	100
29. Aliou Traore	Cowpea breeder (Ing. Agr)	Cowpea breeding	100
30. D.N. Yaro (Mrs)	Cowpea entomologist (M.Sc)	Cowpea entomology	80
31. Seriba O. Katile	Pathologist (Ing. Agr)	Cowpea pathology	40
32. Diakalia Sogodogo	Cereal Agronomist (Ing. Agr)	Cowpea agronomy	40
MAURITANIA			
33. Sidi Fall	Plant Breeder (Ing. Agr)	(On-M.Sc study leave)	-
34. Sidi R'Chid	Agronomist (Diploma)	Cowpea agronomy	40
NIGER			
35. Issaka Maga	Cowpea Breeder (Ing. Agr.)	(On-Ph.D study leave)	100
36. Adamou Moutari	Cowpea Breeder (Ing. Agr)	Cowpea breeding	100
37. Maman Nouri	Agronomist (Ing. Agr)	Cowpea agronomy	40
38. Ahamadou N'Diaye	Entomologist (Ing. Agr)	Cowpea entomology	40
39. Adam Toudou	Phytopathologist (Ph.D) (University)	Cowpea pathology	75
40. Hassane Hamma	Phytopathologist (Ph.D)	Cowpea pathology	50
41. Alzouma Indesdane	Entomologist (Ph.D) (University)	Cowpea entomology	50
42. Oumarou Moussa	Seed Technologist (Ing.Agr)	Cowpea seed technology	40
43. Seyni D. Maïga	Entomologist (Ph.D)	Cowpea entomolgy	50

Varieties released by different RENACO national cowpea programs since 1987.

Country/Name of variety	Origin	Areas of Adaptation	Year released	Quantity of seeds released (kg/ha)	Areas cultivated in 1990	Yield potential (kg/ha)	Yield under farmers' conditions (kg/ha)	Remarks
BURKINA FASO:								
TVx3236	IITA	300-1000 mm	1987	2.500	250	1.500	800-1000 400-600	Pure crop mixed cropping Amount of seed requested less than what is produced by extension services.
CAPE VERDE:								
KN-1	-	-	-	-	-	-	-	-
Local Santiago	-	-	-	-	-	-	-	-
GHANA								
Vallenga (IT82E-16)	IITA/Ibadan	Northern Ghana	1987	1100	23,000	1,700	800-1200	Good yield potential but low price paid in market
Asontem (IT82E-18)	IITA/Ibadan	Southern Ghana	1987	100	29,000	"	1000	Good yield potential but low price paid in market
GUINEA BISSAU								
IT82E-9) Bambey-21)	-	-	-	-	-	-	-	-
GUINEA CONAKRY:								
IT85F-867-5	IITA/SAFGRAD	Lower Guinea	1990	600	40	1.000	500	High rainfall zone
IT85F-867-5	"	Medium Guinea	1990	700	46	900	500	High Altitude Low temperature
IT83D-338-1	"	Upper Guinea	1989	500	33	650	350	Southern Sudan Climate
IT84S-2246-4	"	Upper Guinea	1990	800	53	800	500	" "

A P P E N D I X. - 1 (CONT'D-2)

LIST OF NATIONAL COWPEA SCIENTISTS - RENACO

Country/ Name of Scientist	Qualification	Crops Research Areas	Time spent on cowpea (%)
NIGERIA			
44. A.A. Zaria	Cowpea Breeder (M.Sc)	Cowpea breeding	100
45. A.M. Emechebe	Cowpea Pathologist (Ph.D)	Cowpea pathology	100
46. E.C. Odion	Cowpea Agronomist (M.Sc)	Cowpea agronomy	100
47. C. Amatobi	Cowpea Entomolgist (Ph.D))	Cowpea entomology	100
48. O.O. Olufajo	Cowpea Agronomist (Ph.D)	Cowpea agronomy	100
49. J.K. Adu	Microbiologist (Ph.D)	Microbiology	40
50. J.A.Y. Sheybayan	Weed Scientist (M.Sc)	Weed science	40
51. S.T.O. Lagoke	Weed Scientist (Ph.D)	Weed science	20
SENEGAL			
52. Ndiaga Cisse	Cowpea Breeder (M.Sc)	Cowpea breeding	100
53. Samba Thiaw	Agronomist (M.Sc)	Cowpea agronomy	100
54. Mamadou Gaye	Microbiologist (Dr./Ing)	Microbiology	40
TCHAD			
55. Mr. Daniel Valenghi	-	-	-
TOGO			
56. Poda Assiongbou	(Ing. Agr)	Seed multiplication	-
57. K. Adri	Cowpea Agronomist (Ing.Agr)	Cowpea agronomy	50
58. Daou Ekou-Edi	Entomologist (Ing.Agr)	Cowpea entomology	50
59. Yawo A. Akpaloo	Entomologist (Ing.Agr)	Cowpea entomology	50
60. Akossiwa Duyiboe	Agronomist	Cowpea agronomy	

APPENDIX. - 2 (CONT'D)

Varieties released by different RENACO national cowpea programs since 1987.

Country/Name of variety	Origin	Areas of Adaptation	Year released	Quantity of seeds released (kg/ha)	Areas cultivated in 1990 (ha)	Yield potential (kg/ha)	Yield under farmers' conditions (kg/ha)	Remarks
MAURITANIA:								
IT835-343-5-5	SAFGRAD	Guidimaka	1987/88	25000	1000-2000	1.500	500-700	
Suvita-2	SAFGRAD	Attabi	"	"	500	1.000	300-400	Drought resistant. Acceptability difficult because of seed color.
KVx256-K17-11	SAFGRAD	Tagaut	"	"	500	1.000		
NIGERIA:								
Sampea-7 (IAR-48)x Ife brown(local	Air Nigeria	savanna & forest zones	1987	10000	75000	1500-2500	600	Area cultivated is an estimate. It may actually be more than 75.000 ha.
SENEGAL:								
IS86-275	ISRA Senegal	Sahelian	"	-	20000-30000	2200-2500	600-1100	- -
TOGO:								
IT81D-985	IITA	Savannas	1987-88	-	ND	1000-2000	900	Pre-extension stage, also for sowing date
58-146	ISRA	The whole country	1987-88	-	ND	1100-1600	400-1000	Still in pre-release stage in certains zones

APPENDIX. - 2 (CONT'D)

Varieties in a pre-extension stage in various RENACO national programs since 1987.

Country/Name of variety	Origin	Area of adaptation	Potential areas of cultivation (ha)	Yield potential (kg/ha)	Yield in farmers' conditions (kg/ha)	Remarks
BURKINA FASO:						
KVx30-309-6G	Burkina Faso	300-900 mm	110	1000 en pure 450 en assoc.	800 400	These areas of cultivation are those covered by the 1990 on-farm trials and farmers field which received seeds from our stocks.
KVx61-1	-do-	-do-	350	1500	900	
KVx396-4-4	"	300-1200 mm	350	1500 450	900 400	
KVx396-4-5	-do-	-do-	250	1500 400	900 400	
KVx396-18-10	-do-	-do-	-do-	1500 500	400 400	
CAMEROON						
IT81D-994	IITA	Sudan & Northern Guinea Savanna	-	1200	400	Extension stage
CAPE VERDE						
IT83D-442	-	-	-	-	-	-
Mississipi Silver	-	-	-	-	-	-
GHANA						
IT81D-1137	IITA/Ibadan	Savanna areas	The whole of Ghana	1700	900	Highly acceptable seed coat color
IT83S-818	IITA/Ibadan	-do-	-do-	1000	650	-do-
GUINEA BISSAU						
IT83-219 IT85D-3516-2 IT86D-498 IT87S-1390 IT85-3577 IT83D-889 TVx309-66 IS86-275N IS87-416N	-	-	-	-	-	-

A P P E N D I X. - 4

LIST OF NATIONAL AND INTERNATIONAL COWPEA SCIENTISTS WHO ATTENDED THE 1987 WORKSHOP AT OUAGADOUGOU, BURKINA FASO, IN MARCH, 1987.

Country	Name of Scientist	Address
BENIN:	J. Detongnon	Cowpea Breeder, SRCV-Niaouli B.P. 3, ATTOGON
BURKINA FASO:	Issa Drabo	Cowpea Breeder, CRAF, 01 B.P. 476, Ouagadougou 01
CAMEROUN	Georges Ntoukam	Cowpea Entomologist IRA, B.P. 33, Maroua
COTE D'IVOIRE	Adou Amalaman	Agronomist, IDESSA, B.P. 635, Bouaké 01
GAMBIE	Tijan Jallow	Yundum Agric. Research Station P.O. Box 786, Banjul
GHANA	Antoni Assibi	Legume Breeder Nyankpala Agric. Research Station, Box 52, Tamale
	A. Atuahene-Amankwa	Crops Research Insitute P.O. Box 3785, Kumasi
GUINEE BISSAU	Malam Sadjo	MDR/DEPA, C.P. 71, Bissau
GUINEE CONAKRY	Saikou S. Bah	IRAG, B.P. 1003, Conakry
MALI	Kodio Ondié	Cowpea Breeder, IER/DRA/SRCVO, B.P. 438, Bamako
MAURITANIA	Sidi R'chid	Agronomist, CNRADA, B.P. 22, Kaedi
NIGER	Tijan Jallow	INRAN, B.P. 429, Niamey
	Alzouma Inesdane	Entomologist, INRAN, B.P. 429, Niamey
NIGERIA	Ono Leleji	Agronomist, IAR/ABU, PMB 1044, Zaria
	G.O. Aballu	IAR/ABU, PMB 104, Zaria
	A.M. Emechebe	Pathologist, IAR/ABU, PMB 1044, Zaria
SENEGAL	Mamadou Ndiaye	ISRA, B.P. 3120, Dakar

Varieties in a pre-extension stage in various RENACO national programs since 1987.

Country/Name of variety	Origin	Area of adaptation	Potential areas of cultivation (ha)	Yield potential (kg/ha)	Yield in farmers' conditions (kg/ha)	Remarks
GUINEA CONAKRY						
IT84S-2246-4	IITA/SAFGRAD	Lower Guinea	20	1000	500	Insecticide Protection
IT82E-32	-do-	-do-	5	590	400	-
IT86D-1048	-do-	-do-	5	675	400	-
IT86D-1056	-do-	-do-	5	600	350	-
IT85F-867-5	"	Upper Guinea	5	800	500	-
MAURITANIA						
IT86V-472	SAFGRAD	Valley/Senegal	-	1600-2000	400-600	All these varieties have been
IT82D-544-4	-do-	-do-	-	-do-	-do-	accepted for their bruchid
IT81D-897	-do-	-do-	-	-do-	-do-	tolerant characteristics
IT82D-716	-do-	-do-	-	-do-	-do-	
IT82D-927	-do-	River valley	-	10000-20000	10000	Interesting for forage production
TVx1948-MF	-do-	and dams	-	1500	-do-	and supply of green leaves for
ISRA	-	-	-	1000	5.800	human consumption.
NIGERIA:						
TVx3236	-	Sudano-Guinea savanna	Sudano-Guinea & savanna & forest zone	2500	600k kg/ha	-
IT81D-994	(TVu-1190 x TVu16 x TVu2027) x TVu625)	-do-	-do-	-do-	-do-	-
TOGO						
TVx 1850-01E	IITA	The whole country	-	1000-1300	600-1000	Yield of all varieties are
IT81D-985	"	The whole country except savanna zone	-	1000-2000	900 en milieu humide	highly variable, depending on the region and crop season as well as cultural
58-146	ISRA	The whole country	-	1100-1600	400-1000	practices, especially for IT81D-985.
IT83S-818	IITA	Région des plateaux	-	1000-1300	-	Potential cultivated areas come
IT82E-16	-do-	et Maritime	-	1400-1700	-	under the extension services unit. Non available yet.

APPENDIX. - 3 (CONT'D)

APPENDIX. - 4 (CONT'D)

LIST OF NATIONAL AND INTERNATIONAL COWPEA SCIENTISTS WHO ATTENDED THE 1987 WORKSHOP AT OUAGADOUGOU, BURKINA FASO, IN MARCH, 1987.

Country	Name of Scientist	Address
TCHAD	Yaouga Djekounkosse	Ministère du Développement Rural, Direction Générale de L'Agriculture, Bureau de la Recherche Agronomique, B.P. 441, N'Djamena
TOGO:	Akossiwa Duyiboe	Agronomist, Direction de la Recherche Agronomique, B.P. 2318, Lome
SAFGRAD	Kassu Yilala	Farming System Research P.O. Box 476, Kamboinse Ouagadougou
	Tadesse Kibreab	Farming System Research P.O. Box 476, Kamboinse Ouagadougou
	Toky Payaro	SAFGRAD/RPAA, B.P. 218, Kara
	J.B. Suh	Entomologist, IITA/SAFGRAD 01 B.P. 1495, Ouagadougou 01
	T. Bezuneh	Director of Research, OAU-SAFGRAD, 01 B.P. 1783, Ouagadougou 01
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IITA/ICRISAT	B.R. N'Tare	Cowpea Breeder, ICRISAT Sahelian Center, B.P. 12404 Niamey
IITA/IBADAN	B.B. Singh	Cowpea Breeder, IITA-Kano sub station, PMB 3112, Kano

A P P E N D I X. - 5

RENACO STEERING COMMITTEE MEETINGS

No. Order	Date	Venue	Number of participants
1st Steering Committee meeting	23-27 March, 1987	Ouagadougou Burkina Faso	7
2nd Steering Committee meeting	9-12 November, 1987	Ouagadougou Burkina Faso	14
3rd Steering Committee meeting	28-31 March, 1988	Ouagadougou Burkina Faso	15
4rd Steering Committee meeting	7-11 November, 1988	Zaria, Nigeria	13
5th Steering Committee meeting	23-24 March, 1989	Lome, Togo	12
6th Steering Committee meeting	6-10 November, 1989	Ouagadougou Burkina Faso	13
7th Steering Committee meeting	26-30 March, 1990	Ouagadougou Burkina Faso	9
8th Steering Committee meeting	5-9 November, 1990	Cotonou, Benin	14

1987-03

REGIONAL APPROACH TO COWPEA RESEARCH IN WEST AND CENTRAL AFRICA (RENACO)

MULEBA, N.

AU-SAFGRAD