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West and Central Africa Sorghum Research Network
(WCASRN)

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PARTICIPATION OF NATIONAL AGRICULTURAL
RESEARCH SYSTEMS (NARS)
IN NETWORK ACTIVITIES

1986-1991

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ICR

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TABLE 1. TRAINING

Type	Location	Year	Date	N° of days	Participants	
					Number	No of countries ¹
1. <u>Striga</u> Control	Ouagadougou	1987	5-10 Oct	6	12	11
2. Agronomy/on-Farm Testing	Bamako	1989	9-29 Sept	21	9	9
3. Plant Protection	Bamako	1991	3-12 Oct	10	3	3

1. For Striga: Burkina Faso, Cameroon, Gambia, Ghana, Kenya, Mali, Niger, Nigeria, Sudan, Togo, Uganda.

For Agronomy: Côte d'Ivoire, Gambia, Ghana, Guinea Bissau, Mauritania, Niger, Nigeria, Senegal, Sierra Leone.

For Plant Protection: Tchad, Côte d'Ivoire, Senegal on Striga, entomology and Pathology, respectively.

TABLE 2. MONITORING TOURS

Countries visited	Year	Date	No of days	Participants	
				Number	No. of countries
1. Cameroon Gambia Nigeria Senegal	1986	23 Sept-6 Oct	14	6	6
2. Burkina Faso	1986	3-16 Oct	4	5	5
3. Burkina Faso	1987	30 Sept-3 Oct	4	11	11
4. Mali Burkina Faso Niger	1988	9-18 Oct	10	7	7
5. Mali	1991	10-12 Oct	3 ²	3	3

1. 1986 (1) : Benin, Central African Republic, Gambia, Mauritania, Nigeria, Senegal.
1986 (2) : Ghana, Guinea Bissau, Mali, Niger, Sierra Leone.
1987 : Benin, Burkina Faso, Cameroon, Chad, Côte d'Ivoire, Gambia, Niger, Nigeria, Senegal, Togo, Mali.
1988 : Benin, Burkina Faso, Cameroon, Guinea, Mali, Chad, Togo.
1991 : Niger, Nigeria, Tchad.

TABLE 3. REGIONAL WORKSHOPS

Location ¹	Year	Date	No of days	Participants	
				Number	No of countries ²
Cameroon	1988	20-23 Nov	4	52	14
Niamey	1991	7-14 March	8	20	16

1. Cameroon and Nigeria were the third and fourth workshops. The first and second workshops in 1984 and 1985, fall outside the period under review.

TABLE 4. STEERING COMMITTEE MEETING

Location	Year	Date	No of days	Participants from NARS as	
				Member ¹	Observer ²
1. Ouagadougou, Burkina Faso	1986	13-14 Jan	2	2	1
2. Ouagadougou, Burkina Faso	1987	10-11 March	2	3	1
3. Ouagadougou, Burkina Faso	1987	15-17 Dec	3	4*	1
4. Maroua, Cameroon	1988	24 Sept	1	6*	2
5. Bamako, Mali	1989	9-11 May	3	4*	0
6. Ouagadougou, Burkina Faso	1989	14-17 Nov	4	5*	1
7. Niamey, Niger	1990	2-4 May	3	6*	1
8. Bamako, Mali	1990	3-4 Dec	2	3*	0
9. Niamey, Niger	1991	13-14 March	2	5	0
10. Ouagadougou, Burkina Faso	1991	12-14 Nov	3	5	1

1. An asterik indicates members includes individuals from outside the region, but with NARS on special projects as follows: 1987 = 1; 1988 = 3; 1989, May = 2; 1989, Nov = 2; 1990, May = 2; 1990, Dec = 1.
2. Observers = individuals from NARS. Observers from International and regional organizations not included.

TABLE 5. VISITS TO NARS¹

Made by Country ¹	Countries visited	Year	Date	No of days
Mali	Senegal Gambia	1989	5/9-16/9	8
Nigeria	Ghana	1990	18/8-27/8	10
Burkina Faso	Benin	1990	28/9-6/10	10

1. Countries of the Steering Committee members who assisted the Coordinator in visiting the weaker NARS.

TABLE 6. PERCENTAGE OF VARIETIES CONTRIBUTED BY NARS TO REGIONAL TRIALS

Year	Trial ¹	Total number of test entries	Test entries from NARS	
			Number ²	Percent
1986	WASVAT-E	18	0	0
	WASVAT-M	18	0	0
	WASHAT	30	0	0
1987	WASVAT-E	18	6	33
	WASVAT-M	18	7	39
	WASHAT	22	0	0
	WASLDN	36	0	0
1988	WASVAT-E	18	5	28
	WASVAT-M	18	7	39
	WASHAT	18	0	0
	WASLDN	36	0	0
	WCASST	11	1	9
1989	WASVAT-E	17	6	35
	WASVAT-M	17	10	59
	WASHAT	17	2	12
	WASLDN	25	0	0
	WCASST	11	1	9
1990	WASVAT-E	17	6	35
	WASVAT-M	17	10	59
	WASHAT	18	2	11
	WASDLN	25	0	0
	WCASST	11	1	9
1991	WASVAT-E	11	8	73
	WASVAT-M	15	8	53
	WASHAT	-	-	-
	WASLDN	14	6	43
	WCASST	12	12	100

1. WASVAT-E = West African Sorghum Variety Adaptation Trial, Early Maturing Cycle. M= Medium cycle. WASHAT = West African Sorghum Hybrid Adaptation Trial. WASLDN = West African Sorghum Leaf Disease Nursery. WCASST = West and Central Africa Sorghum Striga Trial.

2. Rest of test entries contributed by ICRISAT.

TABLE 7. NUMBER OF TRIALS DISPATCHED
AND NUMBER OF RESULTS RECEIVED

Year	Trial ¹	Dispatched	Results received	
			Number ²	Percentage
1986	WASVAT-E	7	7	100
	WASVAT-M	8	8	100
	WASHAT	14	12	86
1987	WASVAT-E	10	9	90
	WASVAT-M	13	12	92
	WASHAT	15	15	100
	WASLDN	5	5	100
1988	WASVAT-E	14	12	86
	WASVAT-M	19	13	68
	WASHAT	12	12	100
	WASLDN	7	7	100
	WCASST	6	3	50
1989	WASVAT-E	16	12	75
	WASVAT-M	19	13	68
	WASHAT	9	8	89
	WASLDN	10	2	20
	WCASST	9	6	67
1990	WASVAT-E	15	13	87
	WASVAT-M	19	13	68
	WASHAT	10	10	100
	WASDLN	8	4	50
	WCASST	11	3	27
1991	WASVAT-E	15	11	73
	WASVAT-M	18	12	67
	WASHAT	14	-	-
	WASLDN	9	3	33
	WCASST	6	1	17

1. WASVAT-E = West African Sorghum Variety Adaptation Trial, Early Maturing Cycle. M= Medium cycle. WASHAT = West African Sorghum Hybrid Adaptation Trial. WASLDN = West African Sorghum Leaf Disease Nursery. WCASST = West and Central Africa Sorghum Striga Trial.

2. Rest of test entries contributed by ICRISAT.

TABLE 8. WORKING GROUP MEETING
ON RESEARCH PROJECTS

Working group	Location	Year	Date	Number of days	Participants from NARS ¹
1. Pathology-Entomology	Bamako, Mali	1990	19-20 April	2	5
2. Grain Utilization	Zaria, Nigeria	1990	13 Sept	1	4
3. <u>Striga</u>	Niamey, Niger	1991	10 March	1	5
4. All projects	Bamako, Mali	1992	9-10 March	2	11

1. Participants from NARS were either the principal investigator(s) of the research projects or individuals invited as evaluators. The principal investigators of the projects on anthracnose (Burkina Faso) and grain quality (Niger) were absent in 1992.

TABLE 9. SPECIAL MEETING ON STRIGA

Location:	Bamako
Date:	10-11 March, 1992
Number of days:	2
Participants from NARS:	3
Objective:	Discuss results and develop a common research agenda.
Observers:	FAO, PASCON, SAFGRAD, ICRISAT, IRAT/CIRAD.

WASIP-Mali

The West African Sorghum Improvement Program (WASIP) of ICRISAT based in Mali has the responsibility for developing medium and long duration varieties but not hybrids.

Released Varieties

Some of our varieties have been extensively tested in NARS (National Agricultural Research Systems) and are grown by some farmers. (Table 4). As there are no effective variety release committees in most NARS, the varieties find their way into the farmer's fields without being officially released. Also, in many of these countries, the seed production services are non operational for various reasons, thus making it difficult to get accurate figures of areas grown to the improved varieties. The varieties released in Burkina Faso and Togo where data are available are ICSV 1002 BF, ICSV 16-5-BF, ICSV 1049.

- ICSV 1002 : Burkina Faso: 1 ton of seed production in 1988.
Togo : 160kg of seed production in 1988.
- ICSV 1049 : Burkina Faso: 3 tons of seed production in 1989.
- ICSV 16-5-BF : Burkina Faso: 1 ton of seed production in 1988.

Varieties in pre-release or advanced stage in NARS

During the last 5 years several of ICRISAT improved varieties have been tested by the NARS and those that are in advanced stages of testing are given in Table 4.

- In Mali, ICSV 1063 BF and ICSV 1079 BF were tested on farmers' fields. ICSV III IN have received greater attention in Ghana and Togo, ICSV 1063 BF was included in on-farm tests by extension agencies in Côte d'Ivoire.

- Guinea Bissau: ICSV 126 N and ICSV 1074 BF are in multilocation testing.

- Nigeria: ICSV 1002 BF and ICSV 1007 BF for *Striga* resistance.

Pedigree of high yielding varieties

- ICSV III IN: [(SPN 35 x E 35-1) 153541]-81
- ICSV 1002 BF: (Framida x E 35-1)4-2
Tested throughout Africa in International Sorghum *Striga* Nurseries (ISSN) and Regional Yield Trials (WARST) in pre-release tests in Gambia, and grown by farmers in Burkina Faso.
- ICSV 1049 BF: (Framida x E 35-1)4-2-11. It resembles ICSV 1002 closely but was found to be superior.

- ICSV 1063 BF: [(E 35-1 x Najjadh)-8 x ISVAT 82/E 10]-1
has been tested in the West African Sorghum Variety
Adaptation Trial, (WASVAT) since 1986. It is resistant to
shoot fly, most leaf diseases and lodging. Presently in on-
farm tests in Mali and Côte d'Ivoire.
 - ICSV 16-5 BF: (E 35-1 x 950)-5 has a good level of resistance
to grain mold and head bugs, the two most important grain
quality reducing factors.
- ICSV 1079 BF: (Framida x E 35-1)4-2-15 has a hard grain and
suitable for the preparation of tô, a local dish.

ORIGIN OF VARIETIES AND HYBRIDES
IN TABLES 3-18 OF WECASORN'S REPORT

Varieties starting with:

ICSV, PM, M, 84	- ICRISAT
CE, F2	- Senegal National Program
S, CS	- Cameroon National Program
Malisor	- ICRISAT/Mali Bilateral Program
BF	- Burkina Faso National Program
Sepon	- Niger National Program
Nagawhite	- Ghana National Program
IRAT	- IRAT, Burkina Faso
Nabana Beida	- Mauritania National Program
IS	- International Germplasm (ICRISAT)
ICSH, Haggen Durra	- ICRISAT hybrids
TX	- National Program Niger hybrid

Table 4. Products of research and their impacts - varieties in prerelease stage or advanced stage in NARS.

COUNTRY	VARIETIES USED IN RESEARCH
Burkina Faso	Sudanian zone: ICSV 1002 BF, E35-1, 80 W 68, ICSV 1049 BF, Framida, ICSV 126 IN, 193-2, SPV 35, ICSV 16-5 BF North Guinea Zone: SPV 35 ICSV III IN, ICSV 1002 BF, IS 6928, Framida, E35-1, 84 W 966
Niger	SEPON-82: Multilocation trials with extension services SRN 39 (ICSV 1007 BF): on-farm and on station <u>Striga</u> resistance trials S-35: same stage as SRN 39
Ghana	Multilocation trials in northern region: ICSV III IN, ICSV 1087 BF, ICSV 1078 BF, ICSV 16-5 BF, ICSV 210 IN, ICSV 1054 BF, ICSV 1093 BF, ICSV 1063 BF, ICSV 1089 BF, ICSV 1092 BF.
Togo	ICSV 111 IN and M 66118 - advanced farmers' tests SEPON-82 in multilocation trials ICSV 1007 BF - <u>Striga</u> resistance
Côte d'Ivoire	ICSV 1063 BF and Mali Sor 84-1 in on-farm multilocation testing
Nigeria	ICSV 1002 BF and ICSV 1007 BF for <u>Striga</u> resistance
Sierra Leone	Mali Sor 84-7 in multilocation testing
Guinea-Bissau	ICSV 126 IN and ICSV 1074 BF in multilocation testing
Central African Republic	ICSV 1063 BF and ICSV 1093 BF
Mali	ICSV 1063 BF and ICSV 1079 BF in multilocation and on-farm testing

Note: Except for SEPON 82 and S 35, all varieties listed either originated from various ICRISAT programs or were tested for several years by ICRISAT, e.g. Framida.

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1991

PARTICIPATION OF NATIONAL AGRICULTURAL RESEARCH SYSTEMS (NARS) IN NETWORK ACTIVITIES 1986-1991

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