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West and Central Africa Sorghum Research Network
(WCASRN)

TRIP REPORT TO THE REPUBLIC OF TCHAD

7 - 10, 1990

by

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TRIP REPORT

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ITINERARY

7/10/90	: Bamako - N'Djamena
8/10/90 - 9/10/90	: N'Djamena, Gassi, Dougui
10/10/90	: N'Djamena - Bamako

INTRODUCTION

At the seventh Steering Committee meeting of the West and Central Africa Sorghum Research Network (WCASRN) held between 2 and 4 May, 1990 in Niamey, Niger, it was decided that one of the countries that the Coordinator should visit this season was the Republic of Chad. It was also suggested at that meeting that O.P. Dangi, the member representing Cameroon in the Committee should accompany the Coordinator on his visit to Chad. These visits to National Agricultural Research Systems (NARS) are routine activities of the Network Coordinator, and are meant to keep both the Coordinator and the Steering Committee of the status of research and other activities related to sorghum in the NARS. Information obtained during these visits is particularly useful to the Steering Committee with respect to immediate, short-term, and long-term needs of the NARS. Planning for the future becomes much more meaningful.

OBJECTIVES

Research and other activities related to sorghum differ considerably in each NARS. Thus, instead of having a set of objectives for these visits, WCASRN has developed a standard set of guidelines or terms of reference which can be used for any of the 17 member countries of the Network. These terms of reference have also proved useful to Steering Committee members when they visit NARS on behalf of the Coordinator. These guidelines are given at the end of this report. Irrespective of which NARS is being visited, information on four areas are always sought. These are:

1. Research carried out on sorghum
2. Personnel working on sorghum and their level of training
3. Training needs

4. Conduct of the regional trials of the Network - including field visit when feasible.

Sunday 07/10/90

The Ethiopian Airlines flight from Bamako left on time at 20h15 and arrived at NDjamena at about 02h00, the following morning. I was met at the airport by Yagoua NDjekounkosse (YN), sorghum breeder. His presence at the airport together with copies of my letter to the Director General at the Ministry of Agriculture informing him of my visit and his telex in response to my letter helped me go through immigration without a visa. Airport authorities were courteous and advised me to get a visa that morning in NDjamena.

Monday 08/10/90

After going though the necessary formalities at the police for my visa, I travelled to the Gassi station some 15 km east of NDjamena together with YN and Mr. Alkhali. The latter is responsible for both the Gassi and Dougui stations, but has his office in NDjamena.

At the Gassi station, I met Mr. Gaye S. Yassine, chief of the station and Mr. Semon, a breeder and FAO expert from Togo in the national program of Chad. The station at Gassi is primarily a seed mulitplication center started in 1984. The station has irrigation facilities and multiplies seeds of sesame, groundnuts, soyabeans and maize in addition to sorghum. Apart from multiplication, they carry out regional sorghum trials received from WCASRN and other regional institutions and their own trials of local and improved sorghums. They also conduct surveys in order to exploit the potential of their local sorghum ecotypes. They also evaluate dry season (transplanted) sorghum which they call Berberé. They have selected two lines for release.

During our field visit, I saw S-35 under multiplication. The crop was looking very good and I was informed that it is liked by farmers and was under heavy demand. Apparently, S-35 makes good tô. It was free from leaf diseases but had a few long smut. The average rainfall for that zone is 500 mm and up to my visit, the station has had 402 mm. Thus, it would appear that S-35 is well adapted for the Gassi region. I saw both the early and medium variety trials of WCASRN. On the whole, they were very well managed. I was also shown two trials on local varieties which they collected during a 1987 survey. The first trial consisted of the 25 best lines from that collection and the second trial consisted of the 45 second best local varieties out of the 108 collected in 1987. A further trial was an improved varietal trial of 15 lines selected over the years from regional trials sent to them. I was also shown an observation trial on the Berberé sorghum.

Tuesday 09/10/90

I visited the Dougui station 45 km north of Njamena together with YN and O.P. Dangi (OPD). The Dougui station is in the Sahelian zone with average rainfall of 350 mm. So far, they had received 275 mm. I met Youssouf Adam Imat, sorghum breeder and head of the station and Oumar Kamara, an extension specialist. There was not much activity at this station. The only sorghum crop that was still in the field was CS 54. They explained that CS 54 was being multiplied for on-farm testing. The crop was not looking that good apparently because of poor soil conditions, high bird damage, and a period of drought in September. I was told that in that region, farmers prefer the Berberé sorghum. They would however like to encourage farmers to grow rainfed sorghum as an alternative, and CS 54 would be an initial rainfed variety they would like to recommend to farmers.

The presence of OPD was very useful at this station. He is familiar with CS54 and gave technical advise on how best to grow the variety. Apparently, CS 54 has deep roots and was developed for moisture risk. However, OPD thought that because of the relatively high sugar content in the grains, there would be problems with birds. Good bird scarers would be needed during grain development.

We took a quick look at the harvested panicles of a 15-entry varietal trial. Entries included ICSV 11, ICSV 246, ICSV 401, CS 54, S 35, and several IRAT lines. The panicles were poor perhaps due to lack of adequate rains.

Wednesday 10/10/90

A working group meeting had been scheduled for 08h00 at the Ministry of Agriculture. The meeting was chaired by Dr. M.A. Djaya, head of Agronomic Research. Others present at the meeting were:

- Noudjalbaye BATEDJIN
- Ali Imam ABAKAR
- Ndomian NEKOUAM
- Youssouf Adam IMAT
- NDjekounkosse YAGOUA
- Sena Yassing GAYE
- O.P. DANGI.

After OPD and I briefly explained the purpose of our visit and the philosophy of WCASRN behind these visits, especially with reference to short and long term planning for the 17 member countries of the Network, the chairman requested comments from the scientists present.

GENERAL

Without identifying speakers, I will summarize the important points raised during the discussion.

Sudanian Zone

1. *Striga* and grain molds were the major constraints. Leaf diseases occur but their overall effect had not been assessed. In this zone, the performance of introduced (improved) sorghums had been disappointing. Thus, for two years now, they have been evaluating and selecting local sorghums. Ten populations were under study for their reaction towards *Striga*, grain mold and cecidomyie, and also for their yield potential. Screening for biotic constraints was done under natural conditions.

2. They had found 19 ecotypes tolerant to *Striga* and 8 tolerant to cecidomyie.

3. Other constraints include lack of trained personnel and funds for research. With regards to personnel, there was only one breeder and his assitance.

4. Sorghum was still the major cereal crop and is produced mainly for food. There was very little commercialization of the crop and prices varied a lot. It would appear that millet was slowly becoming more important because it responded better to the poor soil conditions and inadequate water. Farmers rotated with cotton the first year. Ine second year, they usually had either sorghum in pure culture or in association with groundnut. The third year was planted to millet mixed with sorghum, groundnut or cowpea. Most farmers would go into a new field in the fourth year.

5. Between 1983 and 1989, 300 000 ha of land was cropped to sorghum. Yields were on the average 670 kg ha^{-1}.

Sahelian Zone

1. Sorghum is second to millet and constraints included erratic rainfall, long smut and bird damage. They evaluated both local and introduced sorghums and conducted regional trials. They hope to carry out more screening against the biotic constraints in the future. They were interested in short cycle sorghums.

2. Qualified personnel was also a major problem so also were funds for research.

3. The Berberé sorghum was more important in the Sahelian zone. Of the 134 000 ha of land under sorghum, 82 633 ha was grown to Berberé sorghum.

4. There was only one agronomist working on sorghum in the Sahelian zone.

TRAINING

1. They believed there was an urgent need to train Tchadians up to the masters and doctoral levels in all disciplines for sorghum research.

2. They also thought that practical work for the higher degrees should be planned within the existing framework of the work already started by the persons to be trained. When they return they would continue with their work which fits into the overall national plan. This would help with conitnuity.

3. In-service training was stressed, and they wondered whether scientists from ICRISAT and from other international institutions could spend sometime with a Tchadian scientist during the season and help with screening or surveys, etc.

4. There were some reservations about sending technicians to ICRISAT Center in Hyderabad for 3 to 4 months. That, in their opinion, caused "gaps" in their programs. This point was related to number 3 above under training.

ACTIVITIES OF THE NETWORK

In general, there was a general satisfaction with the activities of the Network. Regional trials, monitoring tours, and workshops were singled out. However, it was thought that Tchad had not benefited from the training programs of the Network. Reservations were also expressed about the classification of NARS into Lead, Associate and Technology Adopting Centers, the latter term being synonymous to "weak" NARS. It was pointed out that if Tchad had the trained personnel, they would not be classified as a "weak" NARS. The impression was given that the terms "Lead" and "Associate" were acceptable, but that the so-called Technology Adopting NARS should be incorporated in the associate category of NARS.

At the end of the meeting, the manpower evaluation form for Tchad, prepared by WCASRN, was filled out by Dr. Djaya and others present.

Discussions with Dr. Mahdmat Adoun Djaya (MAD), Chief of Bureau of Agronomic Research.

I had separate discussion with MAD. The important points in our discussion were:

- they had plans to train an agronomist and a pathologist for full time work on sorghum;

- he thought that they needed more specialized training of technicians, and mentioned in-service training for their technicians in fields like entomology, breeding and pathology for periods of three to six months;

- he also thought that their technicians could perhaps spend a week in each of the strong NARS during a cropping season to work with national scientists;

- there was no well defined strategy or government policy towards sorghum research, including training. Thus financial support from the government was minimal. They rely heavily on international organizations for funding;

- they had just completed a document on the reconstruction of their agronomic research for presentation to the World Bank for funding. An adhoc committee would meet again in December, and the proposal would be finalized next March. Their research objectives on the following would then become clearer; rainfed and irrigated crops, general environment, farming systems, and animal research.

I paid a short courtesy call on the Director General of the Ministry of Agriculture, Dr. Abdelwahab Cherif in the company of M. Adoun, N. Yagoua, Imat Youssouf Adam, and O.P. Dangi. The Director General expressed his appreciation for our visit.

I left Njamena later that afternoon for Bamako.

GENERAL COMMENTS

1. It is strongly recommended that Tchad should actively participate in the trianing programs of phase III of the Network at all levels.

2. The local germplasm collected by N. Yagoua should be carefully evaluated and promising ecotypes properly preserved. Perhaps ICRISAT, through the Network could help in this regard.

3. Tchad may want to put more emphasis on the Sudanian zone for varietal development. The impression given is that pearl

millet and Berberé sorghum (transplanted sorghum) are more important in the Sahelian zone.

4. There is an urgent need to train technicians on identification and evaluation of damage caused by biotic stresses (entomology, *Striga*, nematodes). There is already a pathologist in the national program, but he does not work fully on sorghum.

5. The effort, dedication and enthusiasm shown by all the scientists encountered was very encouraging, despite the enormous logistic constraints under which they perform their duties.

ANNEX 1

LIST OF PERSONS ENCOUNTERED

1.	Abdelwahab Cherif	- Director General, Ministry of Agriculture
2.	M. Adoun Djaya	- Chief of the Bureau of Agronomic Research
3.	M. Alkahli	- Supervisor, Gassi and Dougui
4.	Gaye S. Yassine	- Chief of Gassi station - Breeder
5.	Imat Youssouf Adam	- Chief of Dougui station - Breeder
6.	A. Simon	- Breeder - FAO specialist
7.	Yagoua NDjekounkosse	- Breeder
8.	Nekouam Ndomian	- Pathologist
9.	Batejim Noudjallaye	- Seed Production
10.	Abakar Ali Iman	- Farming System

ANNEX 2

LIST OF TCHADIAN NATIONALS WORKING WITH SORGHUM

1. Yagoua NDjekounkosse	- Breeder
2. Imat Youssouf	- Breeder
3. Nekouan Ndomian	- Pathologist (part time)
4. Lanbuza Ranjain	- Breeder (technician)

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RESEAU OUEST ET CENTRE AFRICAIN DE RECHERCHE SUR LE SORGHO

WEST AND CENTRAL AFRICA SORGHUM RESEARCH NETWORK

TERMS OF REFERENCE FOR VISISTS TO NATIONAL PROGRAMS

GUIDE DE REFERENCE POUR LA VISITE AUX PROGRAMMES NATIONAUX

1. The importance of sorghum (area cropped to sorghum, role of sorghum in the diet, market value, national policy on sorghum, etc.);

   L'importance du sorgho (surface cultivée en sorgho, place du sorgho dans l'alimentation, prix de vente, politique nationale sur le sorgho, etc.);

2. Research carried out on sorghum;

   La recherche conduite sur le sorgho;

3. Research personnel working on sorghum (number, discipline, level of qualification); see attached form to be filled.

   Le personnel de recherche travaillant sur le sorgho (nombre, discipline, niveau de formation), ci-joint une fiche à remplir.

4. Major constraints in research and production;

   Contraintes majeures de la recherche et de la production.

5. Farmer's perception of sorghum in their cropping systems;

   Point de vue des paysans sur le sorgho dans leurs systèmes de production;

6. Immediate and long-term research needs and training according to areas of priority;

   Besoins immédiats et à long terme de la recherche et la formation selon les domaines de priorité;

7. Participation in the activities of the West and Central Africa Sorghum Research Network (general workshops, training workshops, monitoring tours, regional trials and nurseries, collaborative research projects).

   Participation aux activités du Réseau de Recherche sur le Sorgho en Afrique Occidentale et Centrale (atéliers généraux, atéliers de formation, visites d'observations, essais régionaux et pépinières, projets de collaboration).

8. Field visit and evaluation of the Network trials (if possible).

   Visite de champs et evaluation des essais du Réseau (si possible).

1990

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