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 **Virginia Tech**

Trip Report

Senegal

14 – 21 April 2012

IPM CRSP Africa Food Security Initiative (IPM CRSP AFSI)

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Abbreviations:

AEG Accelerated Economic Growth

AFSI. African Food Security Initiative. (IPM CRSP associate award)

CDH. *Centre de Développement Horticole*

CFA. West African Franc

CNCA. *Caisse Nationale de Credit Agricole*

CNCFTI. *Comité National de Concertation sur la Filière Tomate Industrielle*

CORAF/WECARD. *Conseil Ouest et Centre Africain pour la Recherche et le Développement Agricoles*. West and Central African Council for Agricultural Research and Development

DRDR *Direction Régionale de Développement Rural*

IER. *Institut d'Economie Rurale* (Mali)

ISRA. *Institut Sénégalais de Recherches Agricole*

OHVN *Office de la Haute Vallée du Niger*

OIRED. Office of International Research, Education, and Development. Virginia Tech

SAED. *Société Nationale d'Aménagement et d'Exploitation des Terres du Delta du Fleuve Sénégal et des Vallées du Fleuve et de la Falémé*

USAID. United States Agency for International Development

VT. Virginia Tech. Blacksburg, Virginia USA

Country Visited/Dates of Travel: Senegal

Traveler Names and Affiliations:

Larry Vaughan, Virginia Tech.

Bob Gilbertson, UC Davis

Muni Muniappan, IPM CRSP Program Director

Jackline Bonabona, Makerere University

Archileo Kaaya, Makerere University

David Kutunga, Makerere University

Warren Arinaitwe, Makerere University

Theodore Nouhoheflin, former Virginia Tech graduate student

Purpose of Trip:

The AFSI associate award supported research and extension activities in Senegal, Mali, and Uganda. During the project, there was never an opportunity for researchers from all three countries to meet and share results. The project close-out workshop held at the ISRA research station in St. Louis was an opportunity for IPM CRSP researchers who were supported by AFSI or doing closely related IPM CRSP work to share results with colleagues. Because of a coup in Mali in March 2012 and the subsequent suspension of assistance by the US government to the government of Mali, none of the Malian researchers could participate in the meeting. Nevertheless, Issa Sidibé of OHVN and Moussa Noussourou of IER sent a presentation to be given on their behalf.

AFSI supported research and/or extension work on four crops: tomato (Senegal, Mali, Uganda), rice (Senegal, Mali), millet (Mali) and maize (Uganda). The workshop was designed to present a summary of the accomplishments in each of these lines of work as well as present socioeconomic insights from surveys and impact assessments on these commodities. These presentations would then become the basis of the project close-out report.

Sites Visited:

Senegal – Dakar, St. Louis

Description of Activities/Observations:

Saturday 14 April.

Departure of Gilbertson, Muniappan, and Vaughan from the US.

Sunday 15 April.

Arrival of Gilbertson, Muniappan, and Vaughan in Dakar

Monday 16 April.

Scheduled departure of project colleagues from Makerere University.

Vaughan arranged rental of a bus and driver for transport to the ISRA station in St. Louis. Emile Coly and Larry finalized arrangement with the interpreters in St. Louis.

Drs. Kaaya and Bonabona arrived from Uganda. The other two people missed the flight, so arrangements for them to come on Wednesday. Larry Vaughan arranged a car to transport them to St. Louis Wednesday afternoon. Arrival from Benin of Nouhoheflin.

Tuesday 17 January.

We left Dakar on the bus Tuesday mid-morning, picking up Emile Coly, director of ISRA's horticultural center (CDH); Samba Diao coordinator ISRA's tomato program; Papa Kane, ISRA research technician; and Mohameth Kane an AFSI trainee who recently graduated from Gaston Berger University. Saliou Djiba, entomologist from the ISRA station at Djibelor in Casamance, could not join us as expected.

After checking in to the hotel, Emile and Larry Vaughan went to the ISRA station to meet the station director, Abdoulaye Fall.

Wednesday 18 January

Mamadou Kane, Saliou Ali, and George Faye worked as interpreters. The workshop began Wednesday morning with fourteen participants. Michelle Corzine from USAID/Mali's Accelerated Economic Growth team and Pape Dieye from USAID/Senegal's Economic Growth team. The workshop program was rearranged in order to accommodate the presentations of the participants arriving Wednesday evening. Michelle and Pape graciously adjusted their schedule to stay through Thursday afternoon for all of presentations, when the field trip was moved from Thursday to Wednesday.

Presentations were originally programmed to fit within conceptual categories and to allow alternation in language for the interpreters (**Table 1**). The order of presentations was modified as circumstances dictated. The morning session largely followed the schedule with an opening statement by the ISRA station director, an outline of the project's major objectives (Vaughan), then an overview of the activities undertaken in Senegal (Coly) and Uganda (Kaaya). Technical presentations began with an overview of tomato pests in Senegal (Diao) and in Mali and West Africa generally (Gilbertson, M. Kane), and extension of area-wide tomato virus management in Mali (Sidibé and Noussourou presented by Gilbertson and Vaughan).

In the afternoon, we took the bus to Dagana and met Abdoulaye Dieng, the president of the Tomato Committee (CNCFTI). He took us to the tomato fields around Dagana. The tomato fields were inter-planted with maize. Mr. Dieng and tomato grower Aliou Diop answered questions from the group about tomato production and pest pressure in canning tomatoes. April is the harvest season for the local canneries.

The tomato committee is a public institution comprising stakeholders in the tomato value chain (credit providers, input providers, growers, truckers, canneries). The rural development agency DRDR, the regional irrigation management authority SAED, and ISRA are also members. There are two meetings per year. A new technique needs to be tested for two or three years before the technique is adopted by the committee.

Production decreased from 70,000 tons from 3,500ha in 2011 to 50,000 tons from 2,500ha in 2012 as contracts with the canneries were decreased.

The canneries pay farmers through the agricultural credit bank, CNCA, which subtracts inputs credits previously provided and makes payments to the farmers. Contracts this year paid 51.05CFA/kg, with 0.05/kg going to the CNCA and matched by the canneries. There are two kinds of contracts: “*contrat bouchon*” in which the cannery pays transport and “*contrat livrer usine*” in which the grower pays transport. An additional 4CFA/kg is paid to growers who pay their own transport.

The canning season is from August to mid-May. Tomatoes are first processed into triple-concentrate during the harvest season. Later in the year, after harvest is ended, the triple concentrate is diluted to double concentrate and canned for retail sale. Harvest is January through May. The canneries in the Senegal River Valley have a capacity of 1,600 tons per day. There are about 20% post-harvest losses at the factory.

In addition to the revenue from tomatoes, the crop residue is worth 70,000CFA/ha for livestock fodder.

The temperatures have been relatively cool, which is not conducive to bacterial wilt. Unlike the previous year, when bacterial wilt was a major concern, bacterial wilt was not a problem this year. Bob Gilbertson nevertheless found plants infected with bacterial wilt in the fields we visited. However, they had managed to form fruit before succumbing.

The input costs for one hectare of tomato is 800,000CFA. If one hectare yields 60T/ha, the expected revenue is 3,120,000CFA.

Thursday 19 January

Thursday was a full day of presentations: economic impact of tomato technologies in Uganda (Bonabona); area-wide tomato extension efforts in Senegal (Diao); testing for herbicide resistance in irrigated rice fields in Senegal (Diallo); weed control using field leveling in Senegal rice fields (Diallo); maize aflatoxin survey in Uganda (Kaaya); breeding disease resistance in maize (Kutunga); and tomato virus and varietal testing in Uganda (Arinaitwe). For lack of time, the presentations on rice pest monitoring in southern Senegal (by S. Djiba presented by Coly and Vaughan) and research on blister beetle management on millet in Mali (Vaughan) were not given.

Friday 20 January

The bus returned to Dakar, and all Ugandan and American participants departed.

Before leaving, Muni Muniappan and Bob Gilbertson visited CORAF to meet Issoufou Kollo and the new Director of Programs Harold Roy-McCauley. Among the topics of discussion was the imminent spread in West Africa of papaya mealybug (*Paracoccus marginatus*), already reported in Benin.

Saturday 21 January

All participants arrive home.

Table 1. Meeting program as planned

African Food Security Initiative (AFSI) Close-out Meeting.

18 & 19 April 2012

Institut Sénégalais de Recherche Agronomique (ISRA) St. Louis, Senegal

An associate award of the Integrated Pest Management Collaborative Research Support Program (IPM CRSP)

Mardi 17 avril			
Tuesday 17 April			
1000h	Autobus de Dakar à St. Louis	Bus from Dakar to St. Louis	
Mercredi 18 avril			
Wednesday 18 April			
0825h	Autobus de l'hôtel à salle de conférence	Bus from hotel to meeting room	
0900h	Ouverture	Opening	A. Fall, Directeur ISRA/St. Louis E. Coly, Directeur ISRA/CDH
0920h	Objectifs et canevas du projet	Project Scope and Objectives	L. Vaughan, Virginia Tech
0940h	Tomate I	Tomato I	
	Canevas de nuisibles prioritaires de la tomate au Sénégal	Overview of priority tomato pests of Senegal	S. Diao. ISRA/CDH
1000h	Canevas : Mali	Overview: Mali	R. Gilbertson, UC Davis M. Noussourou, IER

1020h	Vulgarisation de période sans plante hôte pour la lutte contre la virose de la tomate dans les zones maraîchères du cercle de Kati	Extending the host-free period technique for area-wide virus management in the department of Kati	M. Noussourou. IER I. Sidibé, OHVN
1040h	pause café	coffee break	
1100h	Tomate II	Tomato II	
	Opportunité et contraintes dans l'adoption de gestion zonale de virose de tomate au Sénégal	Opportunities and constraints for adoption of area-wide management of viruses in Senegal	S. Diao, ISRA/CDH
1120h	Impact économique de gestion zonal de virose de la tomate	Economic Impact of area-wide management of tomato viruses	T. Nouhoheflin
1140h	Mesures d'impact en Ouganda	Economic Impact measurement in Uganda	J. Bonabana, Makerere University
1200h	Départ de bus à Richard Toll et Dagana (déjeuner en route)	Bus departure for Richard Toll and Dagana (lunch on the way)	
1830h	Retour à l'hôtel	Return to hotel	
1730h	Retour à l'hôtel par bus	Bus to hotel	

Jeudi 19 Avril

Thursday 19 April

0825h	Autobus de l'hôtel à salle de conférence	Bus from hotel to meeting room	
0900h	Céréales I	Grains I	
	Canevas des activités sur les céréales	Summary of grain research activities	L. Vaughan. Virginia Tech

0915h	Recherches sur maladies du riz en Ouganda	Research on rice diseases in Uganda	(G. Asea), Makerere University
0930h	Impact sur mauvaises herbes et rendement en utilisant planage des rizières au Sénégal	Impact of rice field leveling on weeds and yield in Senegal	S. Diallo, ISRA/St. Louis
1050h	A la recherche de multi-résistance aux maladies : Introgression de germoplasme de maïs septentrional dans des lignes de maïs tropical	Introgressing multiple disease resistance temperate maize germplasm into locally adapted tropical germplasm	D. Kutunga. Makerere University
1010h	Criblage de variétés du riz homologuées dans le nord du Sénégal en face de nuisibles de la région sud	Evaluation of registered rice varieties from the north of Senegal under pressure by pests of the southern region	S. Djiba. ISRA/Djibelor
1030h	pause café	coffee break	
1050h	Céréales II	Grains II	
	Essais dans la Vallée du Fleuve Sénégal sur la résistance par mauvaises herbes de rizières aux herbicides	Tests of herbicide resistance in Senegal Valley rice fields	S. Diallo. ISRA/St. Louis
1110h	Le maïs et aflatoxine en Ouganda	Maize and aflatoxins in Uganda	A. Kaaya. Makerere University
1130	Recherche sur gestion intégrée de méloïdés – ravageurs du mil	Research on integrated management of blister beetle pests of millet	L. Vaughan. Virginia Tech.
1150h	Discussion : Céréales IPM	Discussion: Grains IPM	
1215h	Départ de bus en ville pour déjeuner	Bus departure for lunch	
1400h	Départ de bus pour revenir à la réunion	Bus returns to meeting	
1430h	Tomate III	Tomatoes III	

	TYLC et autres nuisibles prioritaires de tomates en Ouganda	TYLC and other priority tomato pests in Uganda	W. Arinaitwe, Makerere U. J. Karungi, Makerere U.
1450h	Progrès dans notre connaissance des virus de tomates et autres plantes en Afrique de l'Ouest	Advances in knowledge of viruses of tomatoes and other plants in W. Africa	B. Gilbertson. UC Davis
1510	Recherche et adoption des techniques pour la gestion de flétrissement bactérien au Sénégal et Mali	Research and adoption of techniques for managing bacterial wilt in Senegal and Mal	Papa Kane, ISRA Mohameth Kane
1530	pause café	coffee break	
1550	Développement et criblage de la variété MT 56 contre flétrissement bactérien en Ouganda	Development and testing of variety MT 56 against bacterial wilt in Uganda	W. Arinaitwe, Makerere University
1610h	Discussion : Approche stratégique pour gestion de TYLC et flétrissement bactérien chez les paysans	Discussion : Thinking strategically about managing TYLC and bacterial wilt among smallholders	
1645h	Prochains pas	Next steps	L. Vaughan
1700h	Clôture	Closing	R. Muniappan. IPM CRSP Director

Workshop Participants

First Name	Last Name	Institution
Warren	Arinaitwe	Makerere University, Uganda
Jackline	Bonabona	Makerere University, Uganda
Emile	Coly	ISRA/CDH
Michelle	Corzine	USAID/Mali
Samba	Diao	ISRA/CDH
Souleymane	Diallo	ISRA, St. Louis
Papa	Dieye	USAID/Senegal
Bob	Gilbertson	University of California at Davis
Archileo	Kaaya	Makerere University, Uganda
Mohameth	Kane	AFSI short-term trainee
Papa	Kane	ISRA/CDH
David	Kutunga	Makerere University, Uganda
Muni	Muniappan	IPM CRSP, Virginia Tech
Theodore	Nouhoeflin	former Virginia Tech graduate student
Larry	Vaughan	IPM CRSP, Virginia Tech