

# FOOD SECURITY IN AFRICA COOPERATIVE AGREEMENT

Between  
A.I.D./Research and Development Bureau, Office of Economic and Institutional Development  
A.I.D./Research and Development Bureau, Office of Nutrition  
A.I.D./Africa Bureau, Office of Analysis, Research and Technical Support  
A.I.D./Africa Bureau, Office of Sahel West Africa  
USAID Field Missions and Host Country Institutions  
Department of Agricultural Economics, Michigan State University

September 1984-November 1992

## PROJECT FACT SHEETS

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## SECTION I

### GENERAL FACT SHEET - FOOD SECURITY IN AFRICA COOPERATIVE AGREEMENT

#### 1. Cooperating Institutions and Funding Sources:

A.I.D./Research and Development Bureau, Office of Economic and Institutional Development  
(Contact persons: Gary Kinney and Gloria Steele, A.I.D./R&D/EID)  
A.I.D./Research and Development Bureau, Office of Nutrition  
A.I.D./Africa Bureau, Office of Analysis, Research and Technical Support  
A.I.D./Africa Bureau, Office of Sahel West Africa  
USAID Field Missions  
Host Country Institutions  
Department of Agricultural Economics, Michigan State University

#### 2. MSU Faculty and Staff Involved:

Richard Bernsten, Eric Crawford, Josué Dioné, Carl Eicher, Thomas Jayne, James Oehmke, Thomas Reardon, Allan Schmid, James Shaffer, John Staatz, James Tefft, David Tschirley, Raul Varela, Michael T. Weber (Director), Margie Aimery, Vicky Branstetter, Nancy Fair, Janet Munn, Elizabeth Bartilson, Margaret Beaver, Wendy Peters, Jeff Wilson and Chris Wolf.

#### 3. Purpose of the Agreement:

The central purpose of the project is to assist African countries in formulating alternative institutions and management processes that deal with critical short- and medium-term food security problems and that are consistent with longer-term strategies for achieving more reliable, productive and dynamic food systems that benefit both producers and consumers. Specifically, the project will:

1. Develop new knowledge, operational approaches and analytical methods that enhance the ability of governments to identify problems, analyze program alternatives, and formulate strategies that achieve food security goals; and
2. Develop new understanding of how to upgrade institutional and professional capabilities for improving national food systems.

#### 4. Applied Research Themes:

- A. Primary Focus:  
The interaction of technological change, institutional reforms and macro-level policy in overcoming food production and marketing constraints.
- B. Secondary Focus:
  1. Managing foreign exchange, food imports and food aid to achieve food security goals.

2. Planning and prioritizing policy research and analytical requirements to achieve food security goals.
3. Data and analysis needs for food security planning.

## 5. Operationalizing the Applied Research: Countries/Topics Covered

Senegal  
 Mali  
 Malawi  
 Mozambique  
 Rwanda  
 Somalia  
 Tanzania  
 Zimbabwe/Southern Africa Regional  
 Sahel Regional  
 Nutrition - Buy In  
 Agriculture Technology Assessment

## 6A. Outputs to Date: Working Papers and Other Materials With a Cross-Country Focus

D'Agostino, Victoire C. "Cereals Market Liberalization in Mali: Lessons and Prospects." Paper presented at the Annual Meetings of the African Studies Association. Atlanta, 2-5 November 1989. East Lansing: Michigan State University, Agricultural Economics Staff Paper No. 89-111.

Dembélé, Niama N., et John M. Staatz. "Impact des Echanges Régionaux des Céréales sur la Sécurité Alimentaire en Afrique de l'Ouest." Document préparé pour le Séminaire CILSS/Club du Sahel sur les Espaces Céréaliers Régionaux en Afrique de l'Ouest, Lomé, du 6 au 11 novembre 1989. East Lansing: Michigan State University, Agricultural Economics Staff Paper No. 89-93, 1989. Version anglaise: "Impact of Regional Cereals Trade on Food Security in West Africa."

Dioné, Josué. "Policy Dialogue, Market Reform and Food Security in Mali and the Sahel." Paper presented at the Fifth Annual Conference on Food Security Research in Southern Africa, Harare, Zimbabwe, 16-18 October 1989. East Lansing, Michigan, 1989.

Eicher, Carl K., and John M. Staatz. "Food Security Policy in Sub-Saharan Africa." John M. Staatz, co-author. Agriculture in a Turbulent World Economy, edited by A. Maunder and R. Renborg. Proceedings of the 19th Conference of International Agricultural Economists, Aldershot, Hants, England: Gower, 1986, pp. 215-229.

Eicher, Carl K. "Africa's Food Battles," in Agricultural Development in the Third World, Second Edition, Edited by Carl K. Eicher and John M. Staatz, Baltimore, The Johns Hopkins University Press, 1990, 503-530.

- Eicher, Carl K. "African Agriculture: Research Challenges for Social and Technical Sciences in the 1990s," Paper presented at the Summer Institute for African Agricultural Research, University of Wisconsin, Madison, July 1990.
- Eicher, Carl K., and M. Rukuni. "Food Security Policy Options in Eastern and Southern Africa" in National and Regional Self-Sufficiency Goals: Implications for International Agriculture. Edited by Earl D. Kellogg and Fred J. Ruppel. Boulder, CO: Lynne Rienner, (forthcoming).
- Eicher, Carl K., (1990a). "Building African Scientific Capacity for Agricultural Development," Agricultural Economics. Vol. 4(2), pp. 117-143.
- Eicher, Carl K., (forthcoming). "African Agricultural Development Strategies," In Alternative Development Strategies in Africa. Edited by F. Stewart, S. Law and S. Wangwe, London, Macmillan.
- Eicher, Carl K., Mandivamba Rukuni, (1990). "Namibia: Restructuring and Strengthening the Institutional Base for Agricultural Development," Paper prepared for the IAAE Inter-Conference Symposium on Agricultural Restructuring in Southern Africa, Swakopound, Namibia, 24-27 July.
- Kennedy, E. and T. Reardon. "Non-traditional Grains in the Diet of East and West Africa: A Comparison of Kenya and Burkina Faso", submitted to Food Policy, August 1991; revised and resubmitted September 1992. (Represents collaborative work with IFPRI).
- Reardon, T. "Economic Evaluation of Sustainable Agriculture: Challenges from Agroforestry: discussion", American Journal of Agricultural Economics, August 1992.
- Reardon, T. and S. Vosti. "Issues in the Analysis of the Effects of Policy on Conservation and Productivity at the Household Level in Developing Countries", Quarterly Journal of International Agriculture, (4) October - December 1992. (Represents collaborative work with IFPRI).
- Reardon, T. "Review of *The Green Revolution Reconsidered: The Impact of High-Yielding Rice Varieties in South India*, by P. Hazell and C. Ramasamy, with contributions by P.K. Aiyasamy et al.", American Journal of Agricultural Economics, forthcoming January 1993.
- Reardon, T. and P. Webb. "Dealing with food crises: Household strategies for coping during and after drought in East and West Africa" ("Stratégies de ménages pour faire face aux crises de nourriture pendant et après la sécheresse en Afrique de l'est et de l'ouest", presented at CERDI/Université de Clermont I, France, Colloquium "Politique économique et performances agricoles comparées dans les pays d'Afrique et les pays d'Asie à faible revenu", 20-22 March 1991; revised April 1992; forthcoming in seminar proceedings. (Represents collaborative work with IFPRI).
- Statz, John M., Josué Dioné, and N. Nango Dembélé. "Cereals Market Liberalization in Mali." World Development 17, No. 5 (1989):703-18.
- "Food Security Staff Numbers Training Materials - Food Security Research Design and Data Analysis." Materials prepared for UZ/MSU/SADCC short course 1-29-90. MSU.
- Tefft, James F. with Michael T. Weber and John M. Statz. "Research Methods in the MSU Food Security in Africa Project: Conceptualizing and Implementing Policy Relevant Surveys."

MSU International Development Working Paper No. (Draft) East Lansing: Michigan State University, Department of Agricultural Economics, September, 1990.

von Braun, J., P. Webb, T. Reardon, and T. Teklu, "Food Insecurity, Famines, and Coping Mechanisms: Some Lessons from Ethiopia, Sudan, and Burkina Faso", A case study report/chapter for the FAO/WHO December 1992 International Conference on Nutrition. (Represents collaborative work with IFPRI).

Vosti, S. and T. Reardon (eds.) Agricultural Sustainability, Growth, and Poverty Alleviation: Issues and Policies; in-progress for Johns Hopkins University Press. (Represents collaborative work with IFPRI).

Webb, P. and T. Reardon, "Drought Impact and Household Response in East and West Africa", Quarterly Journal of International Agriculture, (3) July-September 1992. (Represents collaborative work with IFPRI).

Weber, Michael T. and Thomas S. Jayne. "Food Security and Its Relationship to Technology, Institutions, Policies and Human Capital." Invited paper prepared for the Phase II Workshop of the Social Science Agricultural Agenda Project, March 17-18, 1988, Woodlands, Texas. East Lansing: Agricultural Economics Staff Paper No. 88-16, Michigan State University. 12 pp.

Weber, Michael T., John M. Staatz, John S. Holtzman, Eric W. Crawford, and Richard H. Bernsten. "Informing Food Security Decisions in Africa: Empirical Analysis and Policy Dialogue." American Journal of Agricultural Economics 70, No. 5 (December, 1988):1044-52.

## **6B: Outputs to Date: Seminars/Conferences**

\*\* Winrock International, meeting with A.I.D. Africa Bureau on 'Agricultural Transformation of Africa', (seminar presentation, May 1992): N.B. Text of talk appears on published proceedings Center for Research on Economic Development (CRED), University of Michigan 'Diversification de revenus dans l'Afrique de l'ouest semi aride' (invited presentation, August 1992)

Food Security and Productivity Unit, A.I.D. Africa Bureau, 'Premier Food Security and Productivity Collaborators Round Table', Oct. 22-23, talk on Agricultural Productivity Project of FS2.

## SECTION II

### FACT SHEET - SENEGAL STUDY

#### FOOD SECURITY IN AFRICA COOPERATIVE AGREEMENT

Department of Agricultural Economics

Michigan State University

(In country time period: July 1986-July 1988)

#### 1. Cooperating Institutions:

USAID/Dakar

Institut Sénégalais de Recherches Agricoles (ISRA), Bureau d'Analyses Macro-Economiques (BAME), Dakar

Department of Agricultural Economics, MSU

#### 2. Researchers Involved:

Senegalese Research Coordinator: Léopold Sarr (ISRA)

MSU In-Country Researcher: Stephan Goetz

Senegalese Researchers: Bocar Diagana, Abdoulaye Fall

MSU Campus Backstop: Eric Crawford, John Holtzman, Jim Shaffer, John Staatz, Margaret Beaver

USAID/Dakar Backstop: Moribajan Keita.

#### 3. Objective of the Research:

Analyze the response of cereals producers and market participants (private traders, parastatal development agencies, farmer organizations) to privatization of input and output marketing.

#### 4. Research Approach:

Surveys of markets, private traders, farmers, and farmer organizations. Area covered = south-east Senegal.

Interviews of policy makers, traders, and management staff in farmer organizations and parastatal agencies.

#### 5A. Outputs to Date: Working Papers

Diagana, B.N. "Les Organisations Paraétatiques et Paysannes dans le Sud-est du Sénégal," Dakar: Direction des Recherches sur les Systèmes Agraires de l'ISRA, Décembre 1987, 21 p.

Diagana, B.N. and S.J. Goetz, "Les Sociétés de Développement Rural et le Système de Distribution des Intrants en 1985 et 1986: Participation et Opinions des Producteurs au Sud-Est du Sénégal." ISRA/BAME, Note d'Information 87-2, Décembre 1987.

Diagana, B.N., "La NPA du Sénégal et la Responsabilisation des Organisations de Producteurs: Problèmes et Options Soulevés par des Enquêtes au Sud-Est du Sénégal." Communication présentés au Séminaire de l'ISRA/MSU sur "la Politique Agricole au Sénégal." 1-8 Juillet 1988. Hotel Novotel, Dakar.

- Diagana, B.N. "Des Sociétés Etatiques de Développement Rural à la Responsabilisation de Producteurs: Premières Experiences de la Nouvelle Politique Agricole dans le Sud-Est de Sénégal." Mémoire de confirmation, ISRA/DRSAEA, 1991.
- Diagana, B.N., A.A. Fall et S.J. Goetz, "Observations Préliminaires sur le Système Agro-Alimentaire dans les Régions Orientales du Sénégal," presented at the AADPA Conference, March 29-April 1, 1987, Hôtel del l'Indépendance, Dakar.
- Fall, A.A. "Etude Descriptive des Marchés Céréaliers au Sud-Est du Sénégal," Dakar: Direction des Recherches sur les Systèmes Agraires de l'ISRA, Décembre 1987, 21 p.
- Goetz, S.J., "Observations on Rural Self-Sufficiency, Transactions Behavior and Prospects for Expanding Cereals Production in Southeastern Senegal: A Preliminary Report," presented to USAID/Dakar, March 1988, 23 pp.
- Goetz, S.J. "Agricultural Product Prices in Select Markets of Southeastern Senegal: Final Report for 1986-87." Presented to USAID/Dakar, March 1988. 17 p.
- Goetz, S.J., B.N. Diagana and A.K. Diallo. "Le Project Sécurité Alimentaire ISRA/MSU/USAID: Note Méthodologique," Dakar: Direction de Recherches sur les Systèmes Agraires de l'ISRA, Décembre, 1987, 21 p. (Also available in English).
- Goetz, S.J., with A. Dieng. "Characteristics of Agriculture and Farm Households in South-eastern Senegal." Presented to USAID/Dakar, March 1987.
- Goetz, S.J. and J.S. Holtzman with A. Dieng. "Crop Mixes, Agricultural Inputs, and Participation with Parastatal Organizations: Reports from Farmers in South-eastern Senegal," May 1987, 38 p.
- Goetz, S.J., A.A. Fall, B.N. Diagana, and J.S. Holtzman. "Private Cereals Traders in Southeastern Senegal and the APS: Observations on Opinions, Prospects and Implementation Issues," Outline Paper prepared for Seminar and Discussion with USAID/Dakar, December 8th, 1987. 10 p.
- Goetz, S.J., B. Diagana, and J.S. Holtzman, "Renforcer la Participation du Secteur Privé dans le Système Agroalimentaire au Sud-Est du Sénégal." Communication séminaire ISRA/MSU Politique Agricole au Sénégal, 7-8 Juillet 1988, Novotel, Dakar.
- Goetz, S.J., B. Diagana, E. Crawford, S. Holtzman, and M. Weber, "An Analysis of the Effects of Changes in Marketing Institutions and Policy on Cereals Producers and Marketing Agents in Southeastern Senegal--Executive Summary." 46 Pages, ISRA/MSU Food Security Project Report submitted to USAID/SENEGAL, September 1988.

**5B. Outputs to Date: Thesis and related papers.**

- Goetz, Stephan J. "Market Reforms, Food Security, and the Cash Crop-Food Crop Debate in Southeastern Senegal." Ph.D. Thesis, Department of Agricultural Economics, Michigan State University, 1990. 251 pp.

- Goetz, Stephan J. "Peanut Seed, Agricultural Labor, and the Food Crop-Cash Crop Debate in Senegal." Mimeo. Department of Agricultural Economics, Michigan State University. May 21, 1990. 22 pp.
- Goetz, S.J. "Economies of Scope and the Cash Crop-Food Crop Debate in Senegal." *World Development*, Vol. 20, No. 5, May 1992, pp. 727-8. .
- Goetz, S.J. "A Selectivity Model of Household Marketing Behavior in Sub-Saharan Africa." *American Journal of Agricultural Economics*, Vol. 74, No. 2, May 1992, pp. 444-452.
- Goetz, S.J. "Interlinked Markets and the Cash Crop-Food Crop Debate in Land-Abundant Tropical Agriculture." Forthcoming in *Economic Development and Cultural Change*, 1993.
- Goetz, Stephan J. "Uncertainty, Transactions Costs, and the Cereals Market Participation of Agricultural Households in Sub-Saharan Africa." Mimeo. Department of Agricultural Economics, Michigan State University, June 15, 1990. 18 pp.
- Goetz, Stephan J. "Food Security, Self-Sufficiency and Market Privatization in Senegal: An Analysis of Farmer Behavior and Policy Options." MSU International Development Paper (Draft). East Lansing: Michigan State University, Department of Agricultural Economics, July 10, 1990. 42 pp.

#### **5C. Outputs to Date: Seminars/Conferences.**

1. In Senegal, the food security team has made presentations at:

The FAO/USAID/ADAAPSO Conference on Food Policy in Francophone Africa, Dakar, March 30-April 3, 1987.

Paper presented was: B. Diagana, A. Fall, and S. Goetz, "Observations Préliminaires sur le Système Agro-Alimentaire dans les Régions Orientales du Sénégal."

USAID/Dakar, November 1986, February 1987, July 1987, and December 1987

2. In the U.S., presentations on the research have been made to:

A.I.D./Washington Workshop on Cereals Policy in the Sahel, Africa Bureau, Office of Sahel and West African Affairs, Thursday, Oct. 8, 1987.

Department of Agricultural Economics, MSU.

Rockefeller Foundation



## FACT SHEET - MALI STUDY

### FOOD SECURITY IN AFRICA COOPERATIVE AGREEMENT

Department of Agricultural Economics  
Michigan State University  
(In-country time period: June 1985 - November 30, 1992)

#### 1. Cooperating Institutions:

USAID/Bamako  
Technical Secretariat of the Food Sector Strategy Commission (ST/CESA)  
Institute of Rural Economics/Farming Systems Division (IER/DRSPR)  
Office des Produits Agricoles du Mali (OPAM)  
Department of Agricultural Economics, MSU

#### 2. Researchers Involved:

ST/CESA: Moussa Kalifa Traoré, Daouda Keita, Oumou Mariko, Kadian Doumbia, and Kassim Koné  
IER/DRSPR: Moussa Diarra, Josué Sagoba, Youssef Cissé, Samba Traoré  
OPAM: Salifou Diarra, Ely Diarra, Mamadou Fané, Agoussa Maiga, Francis Keita, Kader Sonoucoue, Abdramane Traoré, Pierre Traoré  
MSU In-Country Researchers: Victoire D'Agostino, Bruno Henry de Frahan, Niama Nango Dembélé, Josué Dioné, Eleni Gabre-Madhin, Mona Mehta, Phil Steffen, James Tafft  
MSU Campus Backstop: John Staatz, Eric Crawford, A. Allan Schmid, James Shaffer and Michael Weber

#### 3. Objectives of the Research:

ST/CESA - Analyze the effects of reforms in the markets for millet, maize and sorghum on the willingness and capacity of participants to invest in improving the food system. Also, provide applied research assistance to the Malian government and USAID/Mali to strengthen the empirical foundations of ongoing cereal market reforms and help establish a cereals market information system and analytical unit based at OPAM.

IER/DRSPR - Analyze factors affecting the payoff to agricultural research in Mali, especially to analyze the costs and benefits of expanding farming systems research into the Fifth Region of Mali.

#### 4. Research Approach:

The data generated by the MSU-CESA Food Security Project covered a large set of market conduct and performance indicators, including: (a) monthly coarse grain transactions (sales, purchases, barter and gifts) for a sample of 190 farmers distributed among 16 villages in 4 rainfall subzones in the south of the country (CMDT and OHV zones); as well as a sample of 120 farm households in Northeastern Mali (the Gao region) (b) weekly transaction data for the main rural market of each of the 4 southern subzones as well as keep markets in the Northeast; and (c) monthly transaction data for a sample of grain wholesalers in major cities (Bamako, Mopti, Sikasso and Koutiala, Tombouctou, Gao, and smaller towns in the grain-deficit Northeast).

Several single-visit surveys were carried out to gather information on farmers' strategies for ensuring their own food security (available resources, activities and means to meet food needs, major constraints that jeopardize their food situation, major policy and technological factors that enhance their food security, etc.); traders' resources, constraints, and strategic behavior, especially in response to the risk and uncertainty that traders face from unexpected policy changes and supply variability; and the interactive effects of different macro-level policies (fiscal, credit, pricing, extension, etc.), on both traders' and farmers' strategies with respect to their production and marketing activities.

Interviews were also carried out with policy makers and management staff in parastatal agencies.

The surveys conducted with IER/DRSPR began with a rapid farm-level reconnaissance in the Fifth Region to develop an inventory of priority production problems (research areas) for major production systems, constraints to production (marketing, availability of inputs, etc.), and possible solutions. Then the project compiled farm-level data and budgets from a combination of secondary sources and conducted detailed interviews with a sample of farmers drawn from rapid reconnaissance villages. These included information on farm-level investments needed to adopt technologies that would be likely to be available and the net returns resulting from the adopted technologies. Analysis focused on identifying and quantifying the complementary affects of investments in technology generation, extension, market, improvements, and policy reforms.

The Policy Reform and Monitoring (PRAM) component is part of Phase II of the Mali Food Security Project, which began in July, 1987. Field activities under the PRAM ran through August, 1990. Three types of activities were carried out:

- a. Technical Assistance to USAID/Mali in its participation in the PRMC. From July, 1987 through July, 1988, Phil Steffen, an MSU researcher, served as USAID/Bamako's full-time representative to the PRMC technical committee. This committee develops proposals that are submitted to the Malian government for actions to reinforce the process of cereal market liberalization. In July 1988, Steffen stepped down from the technical committee to devote full time to his FSA/CA research. The project staff continued to consult frequently with USAID staff members working on the technical committee.
- b. Applied research aimed at providing the Malian government and USAID/Mali with a stronger empirical foundation on which to base the ongoing cereal market reforms. This research was undertaken jointly by MSU and the Malian Food Strategy Commission (CESA). MSU researchers in Mali who have been involved in this research include Phil Steffen, Nango Dembélé, Mona Mehta, and Victoire D'Agostino. In addition, the PRAM has provided funding to Shelly Sundberg, a Ph.D. candidate from Stanford, who worked with the CESA/MSU team to carry out consumption and nutrition studies of the farmer sample in the OHV zone.
- c. Technical assistance to the Malian government to help it establish a cereals market information system (SIM) and analytic unit based at the cereal marketing board, OPAM. Nango Dembélé had the major responsibility for providing this technical assistance. Eleni Gabre-Madhin, an MSU graduate student, also worked with the SIM in 1990 on a study of Malian grain exports. Her research was jointly funded by MSU and IFPRI. The technical assistance allowed the Malian SIM to begin regular weekly market reporting on over 50 cereals markets throughout Mali beginning in late 1988. Weekly reports are broadcast on national radio and television, fortnightly reports are

published in the official newspaper, *L'Essor*, and the SIM also issues weekly and monthly reports to various government and donor agencies and to PVOs. In addition, the SIM publishes a semi-annual (previously a quarterly) bulletin containing more detailed analysis of cereal market conditions throughout Mali. The Malian SIM is now considered by most observers to be most highly developed cereal market information system in the Sahel.

## **5A. Outputs to Date Working Papers (Papers grouped by component)**

### **1. ST/CESA Component- Cereals Market Reform and Food Security:**

- D'Agostino, Victoire. "La Production et la Commercialisation des Céréales au Mali: Résultats Empiriques et Implications en Matière de Politique." Document de Travail 88-05, Projet Sécurité Alimentaire MSU-CESA-USAID. Bamako: Novembre 1988.
- D'Agostino, Victoire, Josué Dioné, and John Staatz. "An Analysis of Coarse Grain Production and Marketing Patterns in the CMDT and OHV Zones of Mali, 1985-88." Document de Travail 90-02, Projet Sécurité Alimentaire MSU-CESA-USAID. Bamako: Juillet 1990.
- D'Agostino, Victoire C., and John M. Staatz. "The Impact of Import and Export Policies on Malian Coarse Grain Producers." A Presentation to the USAID Workshop on Food Security and Economic Growth in the Sahel. Washington, D.C., September 6-8, 1989. East Lansing: Michigan State University, Agricultural Economics Staff Paper No. 89-85.
- D'Agostino, Victoire C. and John M. Staatz. "Food Security and Economic Growth in the Sahel: Summary of the September 1989 Sahel Cereals Workshop." MSU International Development Working Papers No. 34. East Lansing: Michigan State University, Dept. of Agricultural Economics. November 1989. Reprinted in both English and French by CILSS and the Club du Sahel for the CILSS/Club du Sahel Lomé Conference on Regional Trade in West Africa (November 1989). French title: "Sécurité alimentaire et croissance économique au Sahel: Atelier sur les céréales au Sahel."
- D'Agostino, Victoire, John M. Staatz and Michael T. Weber. "Notes on the Implications of Farm-Level Transactions Data for the PRMC Credit Program." Information Note 89-03, Projet Sécurité Alimentaire MSU-CESA-USAID: Bamako, August 1989.
- Dembélé, Niama Nango, and Philip Steffen. "Evaluation Conjointe des Programmes de Crédit PRMC aux Associations Villageoises et aux Commerçants Privés: Campagne Agricole 1986/87." Document de Travail No. 87-04, Projet Sécurité Alimentaire MSU-CESA-USAID. Bamako: Novembre 1987.
- Dembélé, Niama Nango. "Quelques Eléments de Performance de la Commercialisation Privée des Céréales (Mil-Maïs-Sorgho) au Mali." Document de Travail No. 88-03, Projet Sécurité Alimentaire MSU-CESA-USAID. Bamako: Octobre 1988.
- Dembélé, Niama N., and John M. Staatz. "Impact of Regional Cereals Trade on Food Security in West Africa." Document prepared for the CILSS/Club du Sahel Seminar in West Africa, Lomé, 6-11 November 1989. East Lansing: Michigan State University, Agricultural Economics Staff Paper No. 89-93, 1989.

- Dioné, Josué, Niama N. Dembélé and Oumou Diallo Mariko. "Evolution et Situation Actuelle du Projet d'Etude sur la Sécurité Alimentaire au Mali." Document de Travail No. 86-01, Projet Sécurité Alimentaire MSU-CESA-USAID. Bamako: Mars 1986.
- Dioné, Josué, and Niama Nango Dembélé. "Description des Circuits Céréaliers au Mali et Analyse des Données Secondaires de Prix des Céréales (Mil-Maïs-Sorgho)." Document de Travail No. 86-02, Projet Sécurité Alimentaire MSU-CESA-USAID. Bamako: Mars 1986.
- Dioné, Josué, and Niama Nango Dembélé. "Analyse Provisoire de la Campagne de Commercialisation 1985/86 des Céréales (Mil-Sorgho-Maïs) au Mali." Document de Travail No. 86-03, Projet Sécurité Alimentaire MSU-CESA-USAID. Bamako: Août 1986.
- Dioné, Josué, Niama Nango Dembélé and John Staatz. "Description et Analyse de la Structure du Marché des Céréales (Mil-Maïs-Sorgho) au Mali." Document de Travail No. 86-04, Projet Sécurité Alimentaire MSU-CESA-USAID. Bamako: Septembre 1986.
- Dioné, Josué, Niama Nango Dembélé and John Staatz. "Description et Analyse du Comportement et de la Performance du Marché de Gros des Céréales (Mil-Maïs-Sorgho) au Mali." Document de Travail No. 86-05, Projet Sécurité Alimentaire MSU-CESA-USAID. Bamako: Septembre 1986.
- Dioné, Josué. "Stratégies de Vente, d'Achat et d'Endettement Céréaliers des Producteurs Agricoles." Document de Travail No. 86-06, Projet Sécurité Alimentaire MSU-CESA-USAID. Bamako: Décembre 1986.
- Dioné, Josué, and Niama Nango Dembélé. "Le Programme de Restructuration du Marché Céréalière au Mali (PRMC): Une Analyse de ses Objectifs, son Fonctionnement et ses Réalisations." Document de Travail No. 87-01, Projet Sécurité Alimentaire MSU-CESA-USAID. Bamako: Février 1987.
- Dioné, Josué. "Production et Transactions Céréalière des Producteurs Agricoles-Campagne 1985/86." Document de Travail No. 87-02, Projet Sécurité Alimentaire MSU-CESA-USAID. Bamako: Avril 1987.
- Dioné, Josué, and John Staatz. "Cereal Market Liberalization and Food Security in Mali [Libéralisation du Marché et Sécurité Alimentaire au Mali]." Document de Travail No. 87-03, Projet Sécurité Alimentaire MSU-CESA-USAID: Bamako. Contribution to the Regional Seminar on Food Security in Afrique Australe à Harare, Zimbabwe, 1 - 5 Novembre 1987.
- Dioné, Josué. "Restructuration du Marché Céréalière et Choix des Agriculteurs." Document préparé pour l'Atelier sur la Commercialisation de Céréales. Bamako, le 18-20 Octobre 1988.
- Dioné, Josué (1989d). "Comportement Commercial des Agriculteurs et Commerce Céréalière Régional en Afrique de l'Ouest." Invited paper at the International Seminar on Regional Cereals Markets in West Africa: Current Dynamics and implications for the

Future," sponsored by CILSS/Club du Sahel, Lome, Togo, 6-11 November 1989. MSU Agricultural Economics Staff Paper No. 89-92.

Gabre-Madhin, Eleni Z., Diarra, Salifou B., and Staatz, John M. "La problématique des coûts de transfert dans le cadre de la commercialisation des céréales au Mali." PRISAS Food Security Workshop, Bamako, March, 1992.

Mehta, Mona, and John Staatz. "Une Analyse de la Structure et le Comportement des Grossistes de Céréales au Mali." Document de Travail 90-03, Projet Sécurité Alimentaire MSU-CESA-USAID: Bamako, Août 1990.

Staatz, John M. "The Role of Market Conditions in Influencing the Adoption of New Agricultural Technologies in Mali." Report to USAID/Mali. Bamako: October 1989. East Lansing: Michigan State University, Agricultural Economics Staff Paper No. 89-109, October 1989.

Steffen, Philip, and Niama Nango Dembélé. "Une critique des Rôles Alternatifs pour l'OPAM sur le Marché Céréalière à travers un Paradigme des Biens Publics." Document de Travail No. 88-02, Projet Sécurité Alimentaire MSU-CESA-USAID: Bamako, Août 1988.

Steffen, Philip, and Kassim Koné. "Une Reconnaissance Rapide sur les Marchés Céréalières dans les Régions de Mopti, Tombouctou et Gao." Document de Travail 88-04, Projet Sécurité Alimentaire MSU-CESA-USAID: Bamako, Novembre 1988.

Steffen, Philip. "Un Sondage: Sources et Besoins d'Information des Commerçants sur le Marché Céréalière au Mali." Document de Travail 90-01, Projet Sécurité Alimentaire MSU-CESA-USAID. Bamako: Avril 1990.

Steffen, Philip, and Niama Nango Dembélé. "L'Impact de l'Environnement Régulateur sur les Marchés Céréalières au Mali: Quelques Conséquences de Comportement." Document de Travail 90-04, Projet Sécurité Alimentaire MSU-CESA-USAID. Bamako: Septembre 1990.

Steffen, Philip, and Mona Mehta. "Quelques Eléments de la Sécurité Alimentaire Ménagère dans la Région de Gao: Une Analyse Empirique Provisoire." Note d'Information 89-02, Projet Sécurité Alimentaire MSU-CESA-USAID. Bamako: Octobre 1989.

Steffen, Philip. "Réévaluation des Capacités du Secteur Privé et des Responsabilités du Secteur Public dans le Ravitaillement en Céréales des Zones Déficitaires du Nord et de l'Est du Mali." Document préparé pour l'Atelier sur la Commercialisation de Céréales. Bamako, les 18-20 Octobre 1988.

Steffen, Philip. "The Structural Transformation of OPAM, Cereals Marketing Agency." East Lansing: Michigan State University, Agricultural Economics Staff Paper No. 90-91.

Sundberg, Shelly. "Preliminary Results of Three Rounds of Anthropometric Surveys, 1988-89." Report to USAID/Mali. Bamako, October 1989.

## **2. IER/DRSPR Component- Farming Systems Research in the 5th Region:**

De Frahan, Bruno Henry, Youssouf Cissé, Samba Traoré, and Moussa Boré Diarra. "Feasibility Study of the Expansion of the Farming Systems Research Division into the Fifth Region of Mali." Also published in French under the title "Etude de Faisabilité de l'Extension de la Division de Recherches sur les Systèmes de Production Rurale en Cinquième Région du Mali," June 1989.

De Frahan, Bruno Henry, and Moussa Boré Diarra. "Résultats de l'Enquête Préliminaire en Cinquième Région du Mali. I. La Plaine du Séno et le Plateau de Bandiagara." Bamako: Ministère de l'Agriculture, Institut d'Economie Rurale, Décembre 1987.

Diakitè, Noumou, and Mahamet Kéita. "L'Elevage en Cinquième Région: Contraintes et Actions Prioritaires d'Intervention et de Recherche Appliquée." Bamako: Ministère de l'Environnement et de l'Elevage, Direction Nationale de l'Elevage, Opération de Développement de l'Elevage dans la Région de Mopti, Septembre 1988.

Ministère de l'Agriculture, Institut d'Economie Rurale, Division de Recherches sur les Systèmes de Production Rurale. "Etude de Faisabilité de l'Extension de la DRSPR en Cinquième Région du Mali, Résultats acquis au 15 Mars 1988 et Proposition de Programme." Bamako: Ministère de l'Agriculture, Institut d'Economie Rurale, 15-17 Mars 1988.

Traoré, Samba, Youssouf Cissé and Moussa Boré Diarra. "Note d'Information de l'Etude de Faisabilité de l'Extension de la DRSPR en Cinquième Région. Enquête Informelle sur les Cultures Maraîchères du Plateau de Bandiagara." Bamako: Ministère de l'Agriculture, Institut d'Economie Rurale, Mai 1988.

Traoré, Samba. "Note d'Information de l'Etude de Faisabilité de l'Extension de la DRSPR en Cinquième Région. Les Principaux Résultats de la Recherche sur les Cultures Associées Mil-Niébé au Mali." Bamako: Ministère de l'Agriculture, Institut d'Economie Rurale, Mars 1988.

Traoré, Samba. "Note d'Information de l'Etude de Faisabilité de l'Extension de la DRSPR en Cinquième Région. Etude de la Traction Animale dans le Séno." Bamako: Ministère de l'Agriculture, Institut d'Economie Rurale, Mars 1988.

## **3. OPAM/SIM Component- Market Information and Food Security**

Dembélé, Niama Nango, and Philip Steffen. "Approche Méthodologique pour la Mise en Place d'un Système d'Information au Mali." Document de Travail No. 88-01, Projet Sécurité Alimentaire MSU-CESA-USAID. Bamako: Mars 1988.

Dembélé, Niama N. "Les Opinions des Commerçants de Bamako sur le Système d'Information du Marché Céréalière." Note d'Information 89-01, Projet Sécurité Alimentaire MSU-CESA-USAID. Bamako: Mai 1989.

Dembélé, Niama Nango, and John M. Staats. "Transparence des Marchés Céréalières et Rôle de l'Etat: La Mise en Place d'un Système d'Information des Marchés au Mali." Document préparé pour le Séminaire Européen des Economistes Agricoles de Montpellier du 29 Mai au 2 Juin 1989. East Lansing: Michigan State University,

Agricultural Economics Staff Paper No. 89-83, 1989. Version Anglaise: "Market Transparency and the Role of the State: The Establishment of a Market Information System in Mali." East Lansing: Michigan State University, Agricultural Economics Staff Paper No. 89-83-E, 1989.

Dembélé, Niama N., John M. Staatz, and Johny Egg. "L'expérience du Mali." Paper presented at CILSS/Club du Sahel Conference on Cereals Market Information Systems in the Sahel, Bamako, Mali, 23-25 April, 1990. Paris: Club du Sahel. English version: "The Malian Experience."

Gabre-Madhin, Eleni Z. and Salifou B. Diarra. "La Commercialisation des Céréales Exportées du Mali: Situation - Structure - Performance." Bamako: Ministère des Finances et du Commerce, Office des Produits Agricoles du Mali, Division Système d'Information du Marché (S.I.M.); Institut International de Recherche sur les Politiques Alimentaires (IFPRI); and Michigan State University; Document de Travail No. 1-90, August, 1990.

Gabre-Madhin, Eleni Z. and Aguisa B. Maiga. "Analyse des Marges de Commercialisation des Marchés Céréalières du Mali." Bamako: Ministère des Finances et du Commerce, Office des Produits Agricoles du Mali, Division Système d'Information du Marché (S.I.M.); Institut International de Recherche sur les Politiques Alimentaires (IFPRI); and Michigan State University; Document de Travail No. 2-90, August, 1990.

Staatz, John, N. Nango Dembélé, and Kimberly Aldridge. "The Role of Market Information Systems in Strengthening Food Security: Lessons from Mali." French version: "Le rôle des SIMs dans le renforcement de la Sécurité Alimentaire: Les leçons tirées de l'expérience du Mali." MSU Agricultural Economics Staff Paper No. 92-60.

#### **4. IER/DPAER - Maize Subsector Study**

Boughton, Duncan and Témé, Bino. "Farming Systems and Markets - Combining Analytical Frameworks for Development of Commodity Subsectors: The Case of Maize in Southern Mali." Selected Paper, 12th Annual Farming Systems Symposium, The Association for Farming Systems Research/Extension, East Lansing, September, 1992.

Témé, Bino and Boughton, Duncan. "Preliminary Analysis of the Maize Subsector and Principal Questions." French Version: "Analyse préliminaire sur la filière maïs et principales interrogations." Ministère de l'Agriculture, de l'Élevage et de l'Environnement, Institut d'Économie Rurale, Département Planification Agricole et Économie Rurale. Comité Technique du Programme Système de Production et Économie Rurale. Bamako: April, 1992.

#### **OPAM/SIM- Market Bulletins:**

Applied research assistance provided by the project to the Malian Cereals Market Information System (SIM) has helped the SIM publish regular weekly, monthly, and semi-annual market reports. The semi-annual (formerly quarterly) Bulletin d'Information sur le Marché Céréalière en République du Mali is widely read in donor, government, and PVO offices in Mali.

## **5C. Outputs to Date: Thesis and Dissertations**

### **1. ST/CESA Component- Cereals Market Reform and Food Security:**

Barry, Abdoul Wahab. "A Study of Cereal Price Inter-relationships Across Markets and Commodities at the Wholesale and Retail Levels in Mali." Master's Thesis, Michigan State University, 1989.

D'Agostino, Victoire C. "Coarse Grain Production and Transactions in Mali: Farm Household Strategies and Government Policy." Master's Thesis, Michigan State University, 1988.

Dioné, Josué. "Informing Food Security Policy in Mali: Interactions between Technology, Institutions and Market Reforms." Ph.D. Dissertation, Michigan State University, 1989.

Mehta, Mona, "An Analysis of the Structure of the Wholesale Cereals Market in Mali." Master's Thesis, Michigan State University, 1989.

### **2. IER/DRSPR Component- Farming Systems Research in the 5th Region:**

De Frahan, Bruno Henry. "The Effects of Interactions Between Technology, Institutions, and Policy on the Potential Returns to Farming Systems Research in Semi-Arid Northeastern Mali." Ph.D. Dissertation, Michigan State University, 1990.

## **5D. Outputs to Date: Seminars/Conferences**

### **Within Mali**

In Mali, the food security team has presented numerous seminars to the National Food Sector Strategy Commission (CESA); the technical committee of the Cereals Market Restructuring Project (PRMC); USAID/Bamako; and the Institut d'Economie Rurale (IER), the national agricultural research agency. These seminars were part of ongoing regular interactions between the food security research team and the staff of these organizations.

In addition, project staff provided briefings to Malian participants in the "Debat National sur le PRMC" (June 1987) and made presentations at the following conferences within Mali:

- i. National Cereals Policy Conference (Bamako, June 1988)
- ii. National Market information System Workshop (Bamako, December 1988)
- iii. National SIM (Système d'Information sur le Marché) Seminar (Bamako, December 1989)
- iv. National Rice Subsector Conference (Ségou, February, 1990)

### **Other African Countries**

Nango Dembélé made a presentation to National Seminar on Price Collection and Usage in Mauritania (February, 1990)

### **Within the U.S.**

Seminars and presentations have been made to:



- i. All-University Faculty Seminar, MSU (February 1986)
- ii. Economic Development Workshop, Dept. of Economics, MSU (May 1986 and April, 1988)
- iii. Dept. of Agricultural Economics, Cornell University (May 1986)
- iv. A.I.D./W, Bureau of Science and Technology (February 1987)
- v. Briefing of Niles Brady, Director of Bureau of Science and Technology (February 1987)
- vi. University of Michigan, Institute of Public Policy Studies, Annual Policy Conference (March 1987)
- vii. A.I.D./W, Africa Bureau, Seminar on Cereals Policy in the Sahel (October 1987)
- viii. World Bank, Workshop on Research Methods in Food Security Research and their Applicability to Studies of Land Tenure (March 1988)
- ix. A.I.D./W, Bureau of Science and Technology (March 1988)
- x. Thoman Fellows Group, MSU (September 1988)
- xi. A.I.D./W, Beyond Mindelo I Seminar (October 1988)
- xii. A.I.D./W, Beyond Mindelo II Seminar (September 1989)
- xiii. A.I.D./W, Office of Food for Peace, Workshop on Targeted Food Subsidies in Africa (November 1989)
- xiv. A.I.D./W, Office of Nutrition, Agriculture-Nutrition Linkages Workshop (February 1990)

**International Conferences:**

Presentations were made to the following international conferences:

- i. CILSS/Club du Sahel Seminar on Regional Trade in West Africa (Lomé, November 1989)
- ii. CILSS/Club du Sahel Seminar on Cereals Market Information Systems in the Sahel (Bamako, April 1990)
- iii. CIRAD, CILSS/Club du Sahel, USAID conference on "The Future of Sahelian Agriculture" (Montpellier, France, September 1990)

**Other Project Outputs in Mali were:**

- i. Participation in a special program on Malian television on the Cereals Market Restructuring Project (September, 1986).
- ii. Consultant to the Malian producer of radio and television programs on the PRMC.
- iii. Provision of monthly rural market data to CILSS food security monitoring project in Ouagadougou.
- iv. Briefings of numerous USAID and other donor-sponsored consultants.
- v. Data and analysis provided to IFAD for the design of seasonal credit program for farmers.

## SECTION IV

### FACT SHEET - MALAWI STUDY

#### FOOD SECURITY IN AFRICA COOPERATIVE AGREEMENT

Department of Agricultural Economics  
Michigan State University

(In-country time period: November 1989 - November 1991)

#### 1. Cooperating Institutions:

Center For Social Research (CSR) University of Malawi, Zomba  
Department of Agricultural Economics and Extension, University of Zimbabwe  
USAID/Southern Africa Regional Program, Harare  
Department of Agricultural Economics, MSU

#### 2. Researchers Involved:

Louis A. H. Msukwa, Director of CSR and Study Coordinator  
Dr. Wycliffe Chilowa, CSR and Drs. Benson Kandoole, Ben Kaluwa and E. Silumba, Economics  
Department of Chancellor College  
Naomi Ngwira, CSR staff member and Ph.D. candidate, MSU Agricultural Economics Department

#### 3. Objective of the Research:

Assess the effect of the 1987 General Purposes Act that legalizes private traders on household income and food security. Also to assess the response of private traders to the new policy, and to better understand constraints facing private traders.

#### 4. Research Approach:

Primary data will be collected on household and trader level behavior in 3 regions of Malawi, with emphasis on participants operating in both deficit and surplus producing areas within each region.

Price data will be systematically collected in a sample of rural markets in these study regions, and analyzed along with price data from the NSO on urban market performance.

Study will cover the period March 1990 to May 1991.

#### 5A. Outputs to Date: Working Papers

Kaluwa, Ben M. and Benson F. Kandoole "Impact of Market Liberalization on Household Food Security in Rural Malawi." In Godfrey Mudimu and Richard H. Bernsten, eds. 1989. "Household and National Food Security in Southern Africa." Proceedings of the Fourth Annual Conference on Food Security Research in Southern Africa, October 31 - November 3, 1988. University of Zimbabwe/Michigan State University Food Security Research Project, Department of Agricultural Economics and Extension, Harare.

Kandoole, B., B. Kaluwa and S. Buccola "Market Liberalization and Food Security in Malawi." In Mandivamba Rukuni and Richard H. Bernsten, eds. 1988. "Southern Africa: Food Security

Policy Options." Proceedings of the Third Annual Conference on Food Security Research in Southern Africa. 1-5 Novembers, 1988. University of Zimbabwe/Michigan State University Food Security Research Project, Department of Agricultural Economics and Extension, Harare.

Kandoole, Benson F., Ben Kaluwa and Paul Heisey. "Improving Household Food Security: Interaction Between Technology, Marketing and Trade." In Mandivamba Rukuni, Godfrey Mudimu and Thomas S. Jayne, eds. 1990. "Food Security Policies in the SADCC Region." Proceedings of the Fifth Annual Conference on Food Security Research in Southern Africa, October 16-18, 1989. University of Zimbabwe/Michigan State University Food Security Research in Southern Africa Project, Department of Agricultural Economics and Extension, University of Zimbabwe, Harare.

Kaluwa, Ben and Wycliffe Chilowa. 1990. "Malawi: Food Marketing Liberalisation and Household Food Security: Preliminary Results from Baseline Surveys." In Rukuni and Wyckoff (eds) Market Reforms, Research Policies and SADCC Food Security, University of Zimbabwe, Michigan State University Food Security Project. Department of Agricultural Economics, Harare.

Kandoole, Benson. 1990. "Household Food Security and Market Liberalisation in Blantyre Agricultural Development Districts." In Rukuni and Wyckoff (eds) Market Reforms, Research Policies and SADCC Food Security, University of Zimbabwe, Michigan State University Food Security Project. Department of Agricultural Economics, Harare.

Kandoole, B.F. and L.A.H. Msukwa. 1991. "Household Food and Income Security Under Market Liberalisation: Experience from Malawi." In Wyckoff and Rukuni (eds) Food Security Research in Southern Africa: Policy Implications, University of Zimbabwe, Michigan State University Food Security Project. Department of Agricultural Economics, Harare.

Silumbu, E.B.D. 1991. "Changing Marketing Environment, Emerging Pricing Issues and Policy in Malawi." In Wyckoff and Rukuni (eds) Food Security Research in Southern Africa: Policy Implications, University of Zimbabwe, Michigan State University Food Security Project. Department of Agricultural Economics, Harare.

**5B. Outputs to Date: Thesis and Related Papers**

**5C. Outputs to Date: Seminars/Conferences**

Results will be presented at selected policy workshops to be organized by the CSR.

Selected results to be submitted to the Food Security and Nutrition Bulletin, of the Office of the President and Cabinet.

Selected results to be reported in the Annual UZ/MSU/SADCC workshop.

## SECTION V

### FACT SHEET - MOZAMBIQUE STUDY

#### FOOD SECURITY IN AFRICA COOPERATIVE AGREEMENT

Department of Agricultural Economics  
Michigan State University

(In-country time period: October 1990 - November 1992)

**1. Cooperating Institutions:**

Directorate for Rural Economics, Ministry of Agriculture, Mozambique  
USAID/Maputo  
Department of Agricultural Economics, MSU

**2. Researchers Involved:**

Julio Massinga, Ministry of Agriculture  
Ragendra de Sousa, Ministry of Agriculture  
MSU In-country research: Raul Jorge Varela  
MSU Campus Backstop: David Tschirley and Michael Weber

**3. Objective of the Research:**

Analyze the effect of recent market adjustments on incentives facing traders and producers. Also to assist the Government of Mozambique in establishing a pilot market information system within the Directorate for Rural Economics, Ministry of Agriculture.

**4. Research Approach:**

Conduct rapid market appraisals in selected markets to understand effects of recent market adjustments. Later to survey traders and farmers in these market areas on effects of changes in rules and government policies. Establish a pilot market information system in 4 urban markets and 3 rural markets (in Nampula District).

**5A. Outputs to Date: Working Papers**

Ministerio Do Comercio, Departamiento De Seguranca Alimentar Republic Popular De Mocambique "Situacao Actual Dr. Producao, Consume E Avaliacao Nutricional Na Cidade De Nampula - Pesquisa" Maputo, Agosto De 1990. (The UZ/MAU project contributed computer software and training to facilitate the production of this report.)

Ministry of Agriculture/Mozambique. "Informing the Process of Agricultural Market Reform in Mozambique: A Progress Report.

Ministry of Agriculture/Mozambique. "A Pilot Agricultural Market Information and Analysis System in Mozambique: Concepts and Methods.

Ministry of Agriculture/Mozambique. "Inquérito ao Sector Familiar da Província de Nampula: Observações Metodológicas."

Ministry of Agriculture/Mozambique. "A Socio-Economic Survey of the Smallholder Sector in the Province of Nampula: Research Methods." (Translated from Portuguese).

Ministry of Agriculture/Mozambique. "Inquérito ao Sector Familiar da Província de Nampula: Comercialização Agrícola."

Ministry of Agriculture/Mozambique. "A Socio-Economic Survey in the Province de Nampula: Agricultural Marketing in the Smallholder Sector." (Translated from Portuguese).

Ministry of Agriculture/Mozambique. "Inquérito ao Sector Familiar da Província de Nampula: O Algodão na Economia Camponesa."

Ministry of Agriculture/Mozambique. "A Socio-Economic Survey in the Province of Nampula: Cotton in the Smallholder Economy." (Translated from Portuguese).

Ministry of Agriculture/Mozambique. "The Determinants of Household Income and Consumption in Rural Nampula Province: Implications for Food Security and Agricultural Policy Reform."

Ministry of Agriculture/Mozambique. "A Socio-Economic Survey in the Province of Nampula: Smallholder Land Access and Utilization."

Ministry of Agriculture/Mozambique. "The Economics of Food Aid Pricing: Policy Implications for Mozambique." (Forthcoming).

Ministry of Agriculture/Mozambique. "Maize Marketing in Maputo." (Forthcoming).

#### **5B. Outputs to Date: Thesis and Related Papers**

"Household Expenditure and Consumption Growth Linkages in Rural Nampula Province; Mozambique."

#### **5C. Outputs to Date: Journal Articles**

"Food Security Strategies Under Extremely Adverse Conditions: The Determinants of Household Income and Consumption in Rural Mozambique," Submitted December 1 to World Development.

#### **5D. Outputs to Date: Seminars/Conferences**

- Weber presented a seminar on food security in Southern Africa to a group of 30 Mozambiquian analysts and policy makers on October 28, 1989 at Hotel Rovuma.

- 3 analysts from Mozambique participated in the Food Security Research Design and Data Analysis Short Course conducted at MSU during the month of January, 1990.

- 4 Mozambican analysts participated with Weber and Tschirley in the 1991 and 1992 Annual Conferences of Food Security Research in Southern Africa, sponsored by MSU/University of Zimbabwe.
- 5 Mozambican analysts participated in the Workshop on Socioeconomic Surveys: Concepts, Applications and Analyses, in Tucson, Arizona. September 16-October 11, 1991.
- The In-country research team presented a seminar on results of the Nampula Smallholder Survey in Nampula City in December, 1991.
- Weber presented a seminar on rural and urban research findings of the project at USAID/Mopeto Cooperator's Workshop, January, 1992.
- Weber and Tschirley presented a seminar to USAID officials in Washington, D.C. on food aid reform, April, 1992.
- Tschirley presented a seminar to donors and GOM officials on reform of the food aid distribution system in April, 1992.
- Various seminars to USAID/Maputo officials by Weber, Tschirley, and In-country team.

## SECTION VI

### FACT SHEET - RWANDA STUDY

#### FOOD SECURITY IN AFRICA COOPERATIVE AGREEMENT

Department of Agricultural Economics

Michigan State University

(In-country time period: June 1985 - June 1988)

#### 1. Cooperating Institutions:

OAR/Rwanda (USAID)

Ministry of Agriculture, Agricultural Survey and Statistical Service "SESA,"

Department of Agricultural Economics, MSU

#### 2. Researchers Involved:

SESA: Serge Rwamasirabo, Jean Chrysostome Mukezangango, Jean Leonard Ngirumwami,  
Theobald Kampayana, and Yvan Dejaegher

MSU In-Country Researcher: Scott Loveridge

MSU Campus Backstop: Mike Weber and Jim Shaffer

#### 3. Objectives of the Research:

The two major objectives of this research are: 1) to develop information and analytical procedures which will contribute to understanding of important policy questions related to the interaction of production, marketing, pricing and food security issues for selected storable commodities in Rwanda; 2) to contribute to the development of a framework and analytical capacity for future food security analysis in Rwanda, and the specification of anticipated data requirements.

#### 4. Research Approach:

Study components include national markets, farmers, merchants, and selected public programs and policies. For each component a series of systematic surveys will obtain either existing secondary information or new primary data from a sample of participants.

A majority of the surveys are focused on relatively limited samples and maximize the involvement of analysts in understanding how the selected food system components operate and relate to each other. Four focused surveys will be added to SESA's on-going national sample survey.

#### 5A. Outputs to Date: Working Papers/Journal Articles

Bylenga, Sharon, and Scott Loveridge, "Intégration Régionale des Prix Alimentaires au Rwanda, 1970-1986."

Bylenga, Sharon, and Scott Loveridge, "Regional Integration of Food Prices in Rwanda, 1970-1986", May 1987.

- Dejaehger, Yvan, and Ngarambe Octavien, "La Production de Certaines Cultures Vivriers: La Sécheresse 1984 Comparée à une Année Normale (1986), la Répartition Mensuelle de la Production Agricole et son Impact Possible sur la Stratégie Alimentaire", 27 May, 1987.
- Kampayana, Théobald, "Attitudes, Experiences, Conditions, et Stratégies des Exploitants: Distributions de Fréquence Résultant d'une Enquête Ponctuelle auprès des Ménages Ruraux", 1987.
- Loveridge, Scott, Yvan Dejaehger, and Serge Rwamasirabo. "Problematique du Niveau des Transactions du Haircot au Rwanda: Résultats de Six Mois d'Observations."
- Loveridge, Scott, and Michael T. Weber, "Relationships Between Food Production, Marketing, and Farmer Perceptions in Five Prefectures of Rwanda."
- Loveridge, Scott, and J. Leonard Ngirumwami, "Caracteristiques Descriptives des Commerçants des Produits Vivriers Operant sur des Places Fixes dans Cinq Préfectures du Rwanda."
- Loveridge, Scott, et. al., "Results of a Survey on Farm Level Sorghum Marketings". English draft version of a working paper in French, presented in Kigali, April 5, 1988.
- Loveridge, Scott et. al., "Résultats d'une Enquête sur le Niveau de Commercialisation du Sorgho a l'Echelon du Producteur", Kigali, April 5, 1988.
- Loveridge, Scott, with Krista C. Dessert, "Relationships Between Bean Marketings and Bean Production Techniques: A Study of Fifteen Farms in the Prefecture of Kigali."
- Loveridge, Scott. "Marketing in Rwanda: Imports and Infrastructure." *Food Policy*, April 1991.
- Mukezangango, J. Chrysostome, "Enquêtes sur les Prix: Description des Séries des Prix Déjà Existants."
- Rwamasirabo, Serge, Kampayana Théobald, and Scott Loveridge, "Résultats d'une Enquête sur le Niveau de Commercialisation du Haricot a l'Echelon du Producteur", May 1987.
- SESA/MSU Research Team, "Observations on Price Support and Research Programs for Beans in Rwanda", March 1987.
- SESA/MSU Research Team. "Quelques Observations sur les Programmes de Fixation du Prix Plancher et Recherche sur le Haricot au Rwanda", March 1987.
- SESA/MSU Research Team, "Production, Markets, Prices and Food Security Relationships Among Selected Commodities in Rwanda: A Research Program Overview."
- SESA/MSU Research Team, "Rélations Entre la Production, la Commercialisation, les Prix et la Sécurité Alimentaire de Certains Produits Vivriers Stockables au Rwanda."

**5B. Outputs to Date: Thesis and related papers.**

- Loveridge, Scott "Uses of Farm and Market Survey Data To Inform Food Security Policy in Rwanda" Ph.D. Thesis, Department of Agricultural Economics, Michigan State University, 1988, 529 pp.



Loveridge, Scott "Importance du Haricot et du Sorgho dans le Système de Production des Cultures Vivrières au Rwanda: Disponibilités Actuelles et Projections pour l'Avenir" Ministère de l'Agriculture, Division des Statistiques Agricoles, Republic Rwandaise, 1989.

**5C. Seminars/Conferences:**

1. In Rwanda, the food security team has made presentations at:

Briefing sessions for EEC Marketing Study researchers.

Briefing sessions for USAID/Kigali officials on various occasions.

Presentations and Collaboration with Ministry of Plan and Finance Project on Enterprise and Employment Policy in Rwanda.

The FAO/USAID/ADAAPSO Conference on Food Policy in Francophone Africa, Dakar, March 30 - April 3, 1987.

Workshop on Bean Price and Research Policy for Selected Rwandan Researchers, March, 1987.

Conference on Improving the Understanding of Production and Marketing of Selected Food Products in Rwanda, organized by Ministry of Agriculture for representatives of various Rwandan agencies and donor officials, May 27, 1987.

Conference on Production and Marketing of Sorghum, organized by Ministry of Agriculture for representatives of various Rwandan agencies and donor officials, April 1988.

2. In the U.S., presentations on the research have been made to:

USAID officials in Africa Bureau, S & T, and PPC staff on 3 different occasions.

University of Minnesota - Rwanda Bean Storage Project Researchers.

M.S.U. students and faculty on 3 separate occasions in workshops and lectures.

## SECTION VII

### FACT SHEET - SOMALIA STUDY

#### FOOD SECURITY IN AFRICA COOPERATIVE AGREEMENT

Department of Agricultural Economics

Michigan State University

(In-country time period: June - 1986 - December 1988)

#### 1. Cooperating Institutions:

USAID/Mogadishu  
Ministry of Agriculture, Planning Division, Mogadishu  
Department of Agricultural Economics, MSU

#### 2. Researchers Involved:

Ministry of Agriculture, Planning Division: Abukar Osman Abikar (Director), National Extension Service: Hussein Iman.  
Somali National University, Faculty of Agriculture: Mohamud Ibrahim Asser, Mohammed Osman Farah.  
MSU In-Country Researcher: Yassin Wehelie  
MSU Campus Backstop: John S. Holtzman and Michael T. Weber

#### 3. Objectives of the Research:

Analysis of the effects of selected market, institutional, and technological variables on the investment and production decisions of maize and sesame producers in the lower and middle Shebelle regions and the implications of those decisions for food security in Somalia.

#### 4. Research Approach:

Study components include regional markets (in Southern Somalia), farmers, traders, and selected public programs and policies. Formal surveys are being implemented to gather data on agricultural product and input prices, and producer and trader resources, behavior and constraints. Informal surveys are conducted with selected policy makers, donor agencies and development project managers.

Assemble, analyze, and examine the consistency of available secondary data on national/regional/district production of maize, agricultural commodity prices, imports, food aid, ADC (Agricultural Development Corporation) operations, and technology adoption and impacts.

#### 5A. Outputs to Date: Working Papers

Abikar, Abukar Osman. "An Assessment of the Impact of Agricultural Marketing Liberalization on Performance of Cereal Subsector in Somalia," Working Paper No. 4, April 1987.

Asser, Mohamud Ibrahim. "Maize and Sesame Marketing and Trader Characteristics," Working Paper No. 7, December 1987.

- Asser, Mohamud Ibrahim, Ahmed Mohamud Ga'al, and Yassin J. Wehelie. "Retail and Wholesale Maize Price Trends Between September 1986 to April 15, 1987," Price Report No. 1, May 1987, Market Report Series.
- Holtzman, John S. "Maize Supply and Price Situation in Somalia: An Historical Overview and Analysis of Recent Changes," Working Paper No. 5, May 1987.
- Iman, Hussein M. "Maize and Sesame Technology Adoption and Constraints, Working Paper No. 7, December 1987.
- MOA/Directorate of Planning/MSU Research Team. "Proceedings of Workshop on Food Security Planning and Policy," Held at the Ministry of Agriculture in Mogadishu on May 31, 1987.
- Wehelie, Yassin J. "Maize Price Seasonality: An Analysis of Monthly Retail Maize Prices in Mogadishu from January 1979 to December 1986 (with 1987 Maize Forecast Prices)," Working Paper No. 1, January 1987.
- Wehelie, Yassin J. and Mohamed Osman Farah. "The Situation of Farm Inputs in Somalia," Working Paper No. 8, December 1987.
- Wehelie, Yassin J. and John Holtzman. "Primary Agricultural Characteristics of Maize and Sesame Producing Villages in the Middle and Lower Shebelle Regions," Working Paper No. 3, March 1987.
- Wehelie, Yassin J. and Furhana Wehelie. "Changes in Urban Maize Consumption Patterns, Working Paper No. 2, February 1987.
- Wehelie, Yassin , Mohamud Ibrahim Asser, Katie Baird, John S. Holtzman, Mohamed Osman Farah, and Michael T. Weber. "Selected Food Security Research Findings: A Seminar Discussion Paper." November 1987.

## **5B. Thesis and related papers**

- Wehelie, Yassin Jeyte "The Effects of Policy Adjustments on Food Security in Somalia: The Case of Maize and Sesame in The Shabelle River Valley." Ph.D. thesis, Department of Agricultural Economics, Michigan State University, 1989, 435 pp.

## **5C. Seminars/Conferences**

1. In Somalia, the Food Security Team has made presentations at:

Briefing of Ministry of Agriculture senior officials on several occasions.

Briefing sessions for USAID officials on various occasions.

"Food Security Planning and Policy Workshop," Ministry of Agriculture, May 31, 1987. Workshop participants included representatives of Ministries of Agriculture, National Planning and Finance, the National Extension Service, the Center for Agricultural Research in Somalia (CARS), FAO, World Food Programme, Finnish Aid, UNCDF (Capital Development Fund), World Bank, and USAID.

"Second Food Security Planning and Policy Workshop," Ministry of Agriculture, November 1987.

Briefing of USAID/DAI/Robert Nathan team that examined the impact of structural adjustment programs and agricultural policy reform on the performance of the agricultural sector in Somalia, December 1986/January 1987.

Briefings of other researchers in Somalia, including University of Wisconsin, Land Tenure Center, SARSA Cooperative Agreement, and Bay Region Agricultural Development Project.

2. In the U.S., presentations on the research have been made to:

USAID officials in the Africa Bureau, S & T, and PPC on three different occasions.

Rockefeller Foundation.

MSU students and faculty on two separate occasions in workshops and lectures.

## SECTION VIII

### FACT SHEET - TANZANIA STUDY

#### FOOD SECURITY IN AFRICA COOPERATIVE AGREEMENT

Department of Agricultural Economics  
Michigan State University

(In-country time period: November 1989 - November 1991)

**1. Cooperating Institutions:**

Department of Economics, University of Dar es Salaam  
Department of Agricultural Economics and Extension, University of Zimbabwe  
USAID/Southern Africa Regional Program, Harare  
Department of Agricultural Economics, MSU

**2. Researchers Involved:**

Drs. Haidari Amani and Wilbold Maro, Department of Economics, University of Dar es Salaam  
MSU Campus Backstop: Michael Weber and Jim Shaffer

**3. Objective of the Research:**

Analyze the effect of recent market liberalization policy changes (especially measures to restrict private traders and enhance cooperatives) on food security in Tanzania.

**4. Research Approach:**

Surveys of farmers, traders and cooperative officials in two regions with surplus and deficit grain producing areas in each.

Survey and analysis of price movement in these and other regions.

**5A. Outputs to Date: Working Papers**

Amani, H.K.R. et al. 1987. "Effects of Market Liberalization on Food Security in Tanzania." IN: M. Rukuni and R.H. Bernstein (eds) "Southern Africa: Food Security Policy Options." University of Zimbabwe/Michigan State University Food Security Research Project. Department of Agricultural Economics. Harare.

Amani, H.K.R. et al. 1988 "Impact of Market Liberalisation on Household Food Security in Tanzania." In: G.D. Mudimu and R.H. Bernstein (eds) "Household and National Food Security in Southern Africa." University of Zimbabwe/Michigan State University Food Security Research Project. Department of Agricultural Economics. Harare.

Amani, H.K.R. and S.M. Kapunda. 1989. "Agricultural Market Reform in Tanzania: The Restriction of Private Traders and Its Impact on Food Security." In Rukuni, Mudimu and Hayne (eds) Food Security Policies in the SADCC Region, University of Zimbabwe, Michigan State University Food Security Research Project. Department of Agricultural Economics, Harare.

Amani, H.K.R. and W.E. Maro. 1990. "Household Food Security in Tanzania: Preliminary Findings from Four Regions." In Rukuni and Wyckoff (eds) Market Reforms, Research Policies and SADCC Food Security, University of Zimbabwe, Michigan State University Food Security Project. Department of Agricultural Economics, Harare.

Amani, H.K.R. and W.E. Maro. 1991. "Stock Management: Problems and Policy Under Market Liberalisation for Grains in Tanzania. In Wyckoff and Rukuni (eds) Food Security Research in Southern Africa: Policy Implications, University of Zimbabwe, Michigan State University Food Research Project. Department of Agricultural Economics, Harare.

**5B. Outputs to Date: Thesis and Related Papers**

**5C. Outputs to Date: Seminars/Conferences**

Results will be presented at an annual policy workshop organized by the Department of Economics.

Selected results will also be reported in the annual UZ/MSU/SADCC workshop.

Informal interaction with Tanzanian policy workers about study results will be on-going.

**SECTION IX**  
**FACT SHEET - ZIMBABWE/SOUTHERN AFRICA COMPONENT**  
**FOOD SECURITY IN AFRICA COOPERATIVE AGREEMENT**

Department of Agricultural Economics  
Michigan State University

(In country time period: January 1985-March 1992)

**1. Cooperating Institutions:**

Faculty of Agriculture, University of Zimbabwe  
SADCC Food Security Technical & Administrative Unit, Ministry of Lands, Agriculture and Rural  
Resettlement, Zimbabwe  
USAID/Southern Africa Regional Program, Harare  
Department of Agricultural Economics, MSU

**2. Researchers Involved:**

Co-Directors: Mandivamba Rukuni, University of Zimbabwe and J.B. Wyckoff, Michigan State  
University.  
MSU In-Country Researcher: Thomas Jayne  
University of Zimbabwe Researchers: Mandivamba Rukuni, Godfrey Mudimu, Jayne Stack, Jones  
Govereh<sup>1</sup>, Solomon Chigume<sup>1</sup>, M. Chisvo<sup>1</sup>, Augustine Zvinvashe, L. Rugube, E.A.  
Nuppenau, and Joseph Rusike  
Michigan State University Researchers: Chuck Chopak  
MSU Campus Backstop: Rick Bernsten, Carl Eicher, Jim Shaffer, Jim Tefft, Mike Weber, and  
Chris Wolf  
USAID/Harare Backstop: Doug Pickett

**3. Objectives of the Research:**

Inform and guide the implementation of agricultural, nutrition, and rural development strategies that successfully promote food household security. This objective is achieved through analysis of the maize, oilseed and small grain subsectors in order to provide policy makers a better understanding of micro and macro food security policy issues, tradeoffs and alternatives. In addition, the project seeks to test and refine appropriate research methodologies to address food security policy issues; and strengthen indigenous capacity for food security policy analysis.

**4. Research Approach:**

The Zimbabwe research program has several research thrusts, some of which are being implemented in collaboration with other institutions such as the SADCC/ICRISAT; the Economics and Markets Branch, Ministry of Land, Agriculture and Rural Resettlement; and the Ministry of Health.

A. Household Food Security

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<sup>1</sup> Research Scholars

These studies analyze national markets, farm households, merchants and selected public programs, using secondary and primary (survey) data. The household research focuses on the maize, oilseed and small grain subsectors, particularly in low-rainfall natural regions. Specific studies are being carried out to: 1) assess the potential of crop diversification to increase rural income and improve food security by analyzing the factors determining current cropping patterns, the potential for and constraints to introducing new crops, and policy strategies to facilitate crop diversification; 2) identify the incidence and constraints to the adoption of agricultural technology and policy mechanisms to promote greater adoption; 3) evaluate household grain marketing strategies and policies to promote grain sales, availability, and food security, and; 4) identify the determinants of household food security-- including the incidence of and degree of family food insecurity, the structure and determinants of income and expenditures, the impact of commercialization on family food insecurity, and the impact of alternative policies. This research extends initial analysis that identified factors that contributed to rapid maize production expansion in communal areas since Independence, but found that many households were bypassed.

#### B. Domestic Market Performance and Reform Opportunities

This study analyzes the potential effects of cereals market reform on improving household food security at lower government costs by analyzing the factors constraining the operation of grain, grain meal, and input markets; assessing the volume and pattern of informal grain trade; and exploring the relationship between current grain consumption preferences and the structure/accessibility of grain and mealie meal marketing and pricing. This study builds on insights gained in previous research that identified bottlenecks in household grain marketing.

#### C. Expanded Grain Marketing and Trade

These studies analyze domestic and macroeconomic policies and their impact on domestic marketing and trade. Specific studies will: 1) study national grain price, stock, and trade policies to identify the sources of supply and demand instability and their impact on grain access and availability; evaluate the effects of yellow-maize decontrol on white maize supplies; assess the potential small grain trade, and evaluate the potential for alternative grain marketing, price, stock and trade arrangements to improve household food security; and 2) analyze the effect of trade and exchange rate policies on crop diversification and food security. These studies extend previous research on the potential for and barriers to expanded grain marketing and trade in the SADCC region, and an historical analysis of the impact of Zimbabwe's exchange rate policy on agricultural trade.

#### D. Food Access/Nutrition

This study analyzes the relationship between household grain availability, incomes, and nutritional status; identifies the major factors associated with poor nutritional status; promotes the design of cost-effective nutritional strategies; and, assesses the effectiveness of food relief distribution. This research builds on understandings gained through project-funded research in Botswana on institutional innovation to provide an adequate food supply to at-risk households, including Pula-for-work and supplemental feeding for children under five years, indigents, and pregnant and nursing mothers.



## 5A. Outputs to Date: Working Papers/Journal Articles/ Chapters in Books and Proceedings

- Bernsten, Rick, and David Rohrbach, "Inventory of Household Level Agricultural and Socio-Economic Data Sets, in Zimbabwe," August 15, 1985.
- Blackie, M.J. "Restructuring Agricultural Delivery Systems in Sub-Saharan Africa: A Case Study of Zimbabwe," in J. Mellor, C. Delgado and M.J. Blackie, eds., Accelerating Food Production Growth in Sub-Saharan Africa. Baltimore, The Johns Hopkins University Press.
- Buccola, S.T. "Modelling Policy Options for the Zimbabwe Food Grain Subsector," December 1985.
- Buccola, S.T., and C. Sukumi, "Food Price and Storage Policies: Private versus Social Optima Under Risk," submitted to the American Journal of Agricultural Economics.
- Buccola, S.T., and C. Sukumi, "Optimal Grain Pricing and Storage Policies in Controlled Agricultural Economics: Applications to Zimbabwe," submitted to World Development.
- Buccola, S.T., and C. Sukumi, "Pricing and Storage Decisions in Government Grain Marketing Boards, selected paper presented at the A.A.E.A. meetings, August, 1987.
- Chisvo, Munhamo and T.S. Jayne. "Is Grain Availability an Important Determinant of Variation of Nutritional Status among Children." In J.B. Wyckoff and M. Rukuni (eds), *Toward an Integrated National Food Policy Strategy*, Proceedings of the Second National Consultative Workshop, Troutbeck Inn, Nyanga on Integrating Food, Nutrition and Agricultural Policy, UZ/MSU Food Security Project, Department of Agricultural Economics and Extension, University of Zimbabwe, Harare, 1991.
- Chisvo, M., T.S. Jayne, J. Tefft, Michael T. Weber and James D. Shaffer. "Traders' Perceptions of Constraints on Informal Grain Marketing in Zimbabwe: Implications for Household Food Security and Needed Research." In M. Rukuni and J.B. Wyckoff (eds), *Market Reforms, Research Policies and Food Security in Southern Africa*, Proceedings of the Sixth Annual Conference on food Security Research in Southern Africa, October 1990. Department of Agricultural Economics and Extension, University of Zimbabwe, Harare, 1991.
- Drane, F.H. "Feasibility Study of a Regional Grain Reserve and Food Aid in the SADCC Region," December 1985.
- Eicher, Carl K. "Western Science and African Hunger," Francqui Foreign Lecture, Catholic University of Leuven, Leuven, Belgium, February 5, 1986.
- Eicher, Carl K., and Fidelis Mangwiro. "A Critical Assessment of the FAO Report on SADCC Agriculture and Agricultural Sector Studies," a paper presented at a SADCC Meeting of Permanent Secretaries, Chief Economists, Ministers of Agriculture and SADCC Food and Agriculture Sector Coordinators," Harare, July 24-26, 1986.
- Eicher, Carl K. and Mandivamba Rukuni, "Developing a SADCC Food and Agriculture Strategy: Objectives, Components and Process," background paper prepared for the SADCC Meeting, Harare, July 24-26, 1986.

- Eicher, Carl K., and Fidelis Mangwiro, "A Critical Assessment of the FAO Report on SADCC Agriculture," invited paper prepared for the SACCAR Newsletter, November 1986.
- Highlights of the Second Annual University of Zimbabwe Conference on Food Security in Southern Africa, November 9-13, 1987. This working paper summarizes fifteen papers presented at the Conference and published in Rukuni and Eicher (1987), Food Security in Southern Africa.
- Homewood, G., and M.J. Blackie, "Grain Marketing in Southern Africa: Illustrations from the Zimbabwe Grain Marketing Board," December 1985.
- Jayne, T.S. and E. Nuppenau. "Small Grain Export Potential and Government Objectives in Zimbabwe: A Means-End Inconsistency?" Working Paper 6/90, Department of Agricultural Economics and Extension, University of Zimbabwe, Harare, Zimbabwe, 1990.
- Jayne, T.S. and E. Nuppenau. "Maize Market Reform and Food Security: Conceptual Issues and Empirical Findings from Zimbabwe." Forthcoming in *Food Policy*.
- Jayne, T.S. "Cash Cropping Incentives, Food Market Performance and the Divergence Between National and Household Comparative Advantage." Forthcoming in *Economic Development and Cultural Change*.
- Jayne, T.S. and Munhamo Chisvo. "Zimbabwe's Food Insecurity Paradox: Implications for Grain Marketing reform in Southern Africa." Working Paper 1/91, Department of Agricultural Economics and Extension, University of Zimbabwe, Harare, Zimbabwe, 1990.
- Jayne, T.S. and M. Chisvo. "Unraveling Zimbabwe's Food Insecurity Paradox: Implications for Grain Market Reform in Southern Africa." *Food Policy*, Vol. 16, No. 4, August 1991.
- Jayne, T.S. and Lawrence Rubey. "Maize Milling, Market Reform and Urban Food Security: The Case of Zimbabwe." Forthcoming in *World Development*.
- Jayne, T.S. and Mandivamba Rukuni. "Postscript to Zimbabwe's Maize Revolution: The Costs of Food Self Sufficiency." Submitted to *Food Policy*.
- Jayne, T.S., M. Rukuni, M. Hajek, G. Sithole and G. Mudimu. "Structural Adjustment and Food Security in Zimbabwe." Study Commissioned by the World Bank for the Ministry of Lands, Agriculture and Rural Resettlement, Government of Zimbabwe, 1991.
- Jayne, T.S., M. Chisvo and M. Rukuni. "Zimbabwe's Food Insecurity Paradox." Forthcoming in *Beneath the Surface of Zimbabwe's Maize Revolution* by Carl Eicher and Mandivamba Rukuni (eds), University of California Press/University of Zimbabwe Press (joint publication).
- Jayne, T.S. and M. Rukuni. "Managing Zimbabwe's Food Economy in the 1990s." Forthcoming in *Beneath the Surface of Zimbabwe's Maize Revolution* by Carl Eicher and Mandivamba Rukuni (eds), University of California Press/University of Zimbabwe Press (joint publication).
- Jayne, T.S. and M. Chisvo. "Zimbabwe's Grain Marketing Policy Challenges in the 1990s: Short Run vs. Long Run Options." In J.B. Wyckoff and Mandivamba Rukuni (eds), *Food Security*

- Research in Southern Africa: Policy Implications*, Proceedings of the Seventh Annual Conference on Food Security Research in Southern Africa, October 1990. Department of Agricultural Economics and Extension, University of Zimbabwe, Harare, 1991.
- Jayne, T.S., M. Rukuni, M. Hajek, G. Sithole and G. Mudimu. "Structural Adjustment, Maize Marketing Policy and Food Security in Zimbabwe." In J.B. Wyckoff and M. Rukuni (eds), *Toward an Integrated National Food Policy Strategy*, Proceedings of the Second National Consultative Workshop, Troutbeck Inn, Nyanga on Integrating Food, Nutrition and Agricultural Policy, UZ/MSU Food Security Project, Department of Agricultural Economics and Extension, University of Zimbabwe, Harare, 1991.
- Jayne, T.S., M. Chisvo, B. Hedden-Dunkhorst and S. Chigume. "Zimbabwe's Food Insecurity Paradox." In T.S. Jayne, Jean Wyckoff and Mandi Rukuni (eds), *Integrating Food, Nutrition and Agricultural Policy in Zimbabwe*, Proceedings of the First National Consultative Workshop on Food and Nutrition Policy in Zimbabwe, University of Zimbabwe, Harare, 1990.
- Jayne, T.S., M. Chisvo, S. Chigume and C. Chopak. "Grain Market Reliability, Access and Growth in Low-Potential Areas of Zimbabwe: Implications for National and Regional Supply Coordination in the SADCC Region." In M. Rukuni, G. Mudimu and T.S. Jayne (eds), *Food Security Policies in the SADCC Region*, Proceedings of the Fifth Annual Conference on Food Security Research in Southern Africa, October 1989, Department of Agricultural Economics and Extension, University of Zimbabwe, Harare, 1990.
- Kingsbury, D. "Users Manual for the SADCC's Cereal Trade Database Compiled by UZ and MSU. MSU International Development Working Paper, 1989.
- Kingsbury, David, Stackhouse, Lee Ann, and Rusike, Joseph. (1988). "Cereals Trade Patterns in the SADCC Region." University of Zimbabwe, Department of Agricultural Economics and Extension Working Paper AEE 3/88. Harare. March.
- Kingsbury, David. (1988). "Effects of Alternative Foreign Exchange Allocation Systems on the Zambian Economy with Specific Reference to the Agricultural Sector: 1985-1988". University of Zimbabwe, Department of Agricultural Economics and Extension Working Paper AEE 8/88. Harare. August.
- Kingsbury, David. (1988). "Potential Incentive Effects of Pricing Policy on Agricultural Trade in Several SADCC Countries: Preliminary Results". Paper prepared for the Fourth Annual Conference on Food Security Research in Southern Africa, Holiday Inn, Harare, October 31 - November 3, 1988.
- Mlambo, Kupikile, Kingsbury, David, and Rusike, Joseph. "Agricultural Marketing and Trade Policies with the Potential to Promote Food Security in countries of the SADCC Region: A Research Proposal". In: M. Rukuni, and R.H. Bernsten (eds.). Southern Africa: Food Security Policy Options. (1988). Extension, University of Zimbabwe, Harare.
- Mlambo, Kupikile. (1988). "Exchange Rate Overvaluation and Agricultural Performance in Zimbabwe: 1965-1985." Paper prepared for the Fourth Annual Conference on Food Security Research in Southern Africa, Holiday Inn, Harare, October 31 - November 3, 1988.

- Muchena, S.C. "SADCC's Food Security Programme: Implications for Food Security Researchers," December 1985.
- Mudimu, Godfrey D. and Richard H. Bernsten. *Household and National Food Security in Southern Africa*. University of Zimbabwe, UZ/MSU Food Research in Southern Africa, 1989.
- Muntanga, C. "National Grain Reserve and Trade Policy Issues in Zambia," December 1985.
- Murphy, Peter T.W. "The Zimbabwe National Grain Reserve, and Grain Trade Policy Issues with Particular Reference to Barter Trading," December 1985.
- Rohrbach, D. "The Economics of Communal Sector Maize Production in Zimbabwe: 1980-1985," December 1985.
- Rohrbach, D. "The Economics of Smallholder Maize Production in Zimbabwe: Implications for Food Security. MSU International Development Paper, East Lansing, MI 1989.
- Rukuni, M., and M.J. Blackie, "Irrigation and Food Security in Southern Africa," December 1985.
- Rukuni, Mandi, T.S. Jayne and Julia Tagwireyi. "Alleviating Hunger in Zimbabwe: Toward a National Food Security Strategy." Report Commissioned for the World Bank Agricultural Sector Memorandum, Report No. 9429, Agriculture Operations Division, Washington D.C., 1991.
- Rukuni, Mandivamba and Richard Bernsten. *Southern Africa: Food Security Policy Options*. 1988.
- Rusike, Joseph. (1988). "Trader Perceptions on Constraints to Expanding Agricultural Input Trade Among Selected SADCC Countries: Preliminary Results". Paper prepared for the Fourth Annual Conference on Food Security Research in Southern Africa, Holiday Inn, Harare, October 31 - November 3, 1988.
- Sigwele, Howard. "Botswana National Food Security Policy," December 1985.
- Stanning, Jayne. "Household Grain Marketing and Storage Decisions in Southern Africa," December 1985.
- Stanning, Jayne. "Factors of Change and Uncertainty in the Contribution of Small Scale Producers to Marketed Agricultural Output in Zimbabwe," paper presented at the XIXth Conference of the International Association of Agricultural Economists, Malaga, Spain, August 25-September 5, 1985.
- Wyckoff, J.B. and Mandivamba Rukuni. *Food Security Research in Southern Africa: Policy Implications*. 1992.
- Wyckoff, J.B. and Mandivamba Rukuni. *Market Reforms, Research Policies and SADCC Food Security*. May 1991.

## **5B. Outputs to Date: Theses and Dissertations**

- Chigume, S. (in progress), "Grain Marketing Organization: Household Marketing Behavior and Food Security in Semi-Arid Areas of Zimbabwe," M. Phil., UZ.
- Chisvo, Munhamo. "Grain Market Performance, Household Nutrition and Food Security in Zimbabwe: Implications for Policy.
- Chopak, C. (in progress), "Structure, Level, and Determinants of Rural Poverty in Low Rainfall Areas of Zimbabwe," Ph.D., MSU.
- Govereh, J. (in progress), "Constraints to Crop Productivity in Marginal areas of Zimbabwe: Extent and Impact of Technology Adoption," M. Phil., UZ.
- Kingsbury, D. 1989, "Analysis of Policy and Non-Policy Barriers to Agricultural Marketing and Trade in Southern Africa," Ph.D., MSU.
- Makombe, G. (in progress), "Economics of Groundnut Production in Zimbabwe," M. Phil, UZ.
- Mudimu, G. (in progress), "Crop Diversification in the Low and High Rainfall Communal Areas of Zimbabwe," D.Phil.
- Ngobese, P. 1987, "The Economics of Large-Scale Wheat Production in Zimbabwe," M.S., Virginia Polytechnic Institute and State University.
- Rohrbach, D. 1987, "Growth of Smallholder Maize Production and Food Security in Zimbabwe," Ph.D., MSU.
- Stanning, J. (in progress), "Smallholder Marketing and Consumption Behavior in Three Communal Areas of Zimbabwe," D.Phil., UZ.

## **5C. Outputs to Date: Seminars, Conferences, and Conference Proceedings**

In Zimbabwe, the Food Security team has made presentations at:

- The First Annual University of Zimbabwe Conference on Food Security in Southern Africa, December 1985.
- The Second Annual University of Zimbabwe Conference on Food Security in Southern Africa, November 1986.
- The Third Annual University of Zimbabwe Conference on Food Security in Southern Africa, November 1987.
- The Fourth Annual University of Zimbabwe Conference on Food Security in Southern Africa, November 1988.
- The Fifth Annual University of Zimbabwe Conference on Food Security in Southern Africa, October 1989.
- Workshop on Food Security Research Methodology and Software, March, 1987.

- Review of Policy Implications of the Maize Study Research (Rohrbach) presented to policy analysts and decision makers in the Ministry of Agriculture, Lands and Resettlement, Grain Marketing Board and Agricultural Finance Corporation.
- Seminars at the Faculty of Agriculture, University of Zimbabwe.
- National Consultative Workshop on Food Nutrition and Agricultural Policy, July 15-18, 1990.

In the U.S., presentations on the research have been made to:

- USAID officials in Africa Bureau and S & T.
- MSU students and faculty on six different occasions.
- Rockefeller Foundation

Conference Proceedings:

Rukuni, M. and C.K. Eicher (eds.) 1986. *Food Security for Southern Africa*. Proceedings of the Second Annual Conference on Food Security Research in Southern Africa, November 9-13. UZ/MSU Food Security Project, Department of Agricultural Economics and Extension, University of Zimbabwe, Harare (18 papers).

Rukuni, M. and R.H. Bernsten (eds.) 1987. *Southern Africa: Food Security Policy Options*. Proceedings of the Third Annual Conference on Food Security Research in Southern Africa, November 1-5. UZ/MSU Food Security Project, Department of Agricultural Economics and Extension, University of Zimbabwe, Harare (26 papers).

Mudimu, G.D, and R.H. Bernsten (eds.) 1988. *Household and National Food Security in Southern Africa*. Proceedings of the Fourth Annual Conference on Food Security Research in Southern Africa, October 31-November 3. UZ/MSU Food Security Project, Department of Agricultural Economics and Extension, University of Zimbabwe, Harare (28 papers).

Rukuni, Mandi, G. Mudimu and T.S. Jayne (eds). *Food Security Policies in the SADCC Region*. Proceedings of the Fifth Annual Conference on Food Security Research in Southern Africa, October 1989, Department of Agricultural Economics and Extension, University of Zimbabwe, Harare, 1990.

Rukuni, M., and J.B. Wyckoff (eds). "Market Reforms, Research Policies and SADCC Food Security." Proceedings of the Sixth Annual Conference of Food Security Research in Southern Africa, November 12-14, 1990. UZ/MSU Food Security Project, Department of Agricultural Economics and Extension, University of Zimbabwe, Harare.

Wyckoff, J.B., and M. Rukuni (eds). "Food Security Research in Southern Africa: Policy Implications." Proceedings of the Seventh Annual Conference of Food Security Research in Southern Africa, October 28-30, 1991. UZ/MSU Food Security Project, Department of Agricultural Economics and Extension, University of Zimbabwe, Harare.

Jayne, T.S., Jean Wyckoff and Mandi Rukuni (eds). *Integrating Food, Nutrition and Agricultural Policy in Zimbabwe*. Proceedings of the First National Consultative Workshop on Food and Nutrition Policy in Zimbabwe, University of Zimbabwe, Harare, 1990.

UZ/MSU Food Security Project. *"Toward An Integrated National Food Policy Strategy: Proceedings of the Second National Consultative Workshop on Integrating Food, Nutrition and Agricultural Policy."* Troutbeck Inn, Nyanga, June 10-12.

## SECTION X

### FACT SHEET - SAHEL REGIONAL PROGRAM FOR STRENGTHENING INSTITUTIONAL RESEARCH CAPACITY ON FOOD SECURITY IN THE SAHEL (PRISAS)

#### FOOD SECURITY IN AFRICA COOPERATIVE AGREEMENT

Department of Agricultural Economics  
Michigan State University

(In-country time period: January 1990 - November 1992)

#### 1. Cooperating Institutions:

Institut du Sahel (INSAH), Bamako, Mali  
A.I.D./Washington - Africa Bureau, Office for Sahel West Africa  
Department of Agricultural Economics, MSU

#### 2. Researchers Involved:

Dr. A. Tijan Jallow, Directeur General, INSAH (Overall Coordinator)  
Dr. Josué Dione, In-country Program Director; Bakary Kanté  
Campus Backstop: Drs. John Staatz, Eric Crawford, A. Allan Schmid, Thomas Reardon, and  
Michael Weber

#### 3. Objective of the Research:

Strengthen Sahelian institutional capacity to carry out food security policy analysis and extension activities;

Diffuse more widely to Sahelian researchers and policy makers the results of recent food security research and policy reforms;

Train Sahelian food security researchers in improved research methods;

Stimulate new studies on regional food security issues in the Sahel.

#### 4. Research Approach:

The work plan will begin with the establishment of an office at INSAH in Bamako, and the development of four synthesis research reports along with an inventory and review of existing research on food security in the Sahel.

#### 5A. Outputs to Date: Working Papers

Coulibaly, Ousmane N. and Josué Dioné (1990). "Agricultural Technology transfer in the Sahel: A Baseline Literature Review." (Provisional Draft). Research Paper No. RP 90-01/PRISAS, August, 1990. Bamako: PRISAS, Institut du Sahel.



- D'Agostino, Victoire C. and John M. Staatz. "Food Security and Economic Growth in the Sahel: Summary of the September 1989 Sahel Cereals Workshop." MSU International Development Working Papers No. 34. East Lansing: Michigan State University, Dept. of Agricultural Economics. November, 1989. Reprinted in both English and French by CILSS and the Club du Sahel for the CILSS/Club du Sahel Lomé Conference on Regional Trade in West Africa (November, 1989). French title: "Sécurité alimentaire et croissance économique au Sahel: Atelier sur les céréales au Sahel."
- Dioné, Josué. "Comportement Commercial des Agriculteurs et Commerce Céréaliier Régional en Afrique de l'Qest." Document préparé pour le CILSS/Club du Sahel Séminaire sur les Espaces Céréaliiers Régionaux en Afrique de l'Qest: Dynamiques Actuelles et Enjeux pour l'Avenir. Lomé, Togo, 6-10 Novembre 1989. East Lansing: Michigan State University, Agricultural Economics Staff Paper 89-93, 1989. Version anglaise: "The Commercial Behavior of Farmers and Regional Cereal Trade in West Africa."
- Dioné, Josué. "Amélioration de l'utilisation des Données au Sahel: Necessite d'un Plan d'action Pour le Renforcement des Capacities Locales d'Analyse et de Diffusion de l'Information sur les Marches" - Document prepare pour le Seminaire du C.I.L.S.S. et du Club du Sahel sur Les Systemes d'Information sur les Marchés Céréalières Bamako, Mali, 23 - 15 Avril 1990.
- Dioné, Josué. "Libéralisation Interne Et Sécurité Alimentaire" Supplement la lettre de Sologral - Strategies Alimentaires n° 34. Septembre/Octobre 1990.
- Dioné, Josué (1990a). "Amélioration de l'Utilisation des Données au Sahel: Nécessité d'un Plan d'Action pour le Renforcement des Capacités Locales d'Analyse et de Diffusion de l'Information sur les Marchés." Paper prepared for the Regional Seminar on "Cereals Market Information Systems in the Sahel," sponsored by CILSS and club du Sahel, Bamako, Mali, 23-25 April 1990. Working Paper No. DT 90-01/PRISAS.
- Dioné, Josué (1991c). "Libéralisation des Marchés Céréaliiers: Synthèse des Résultats des Etudes et Implications pour les Politiques Alimentaires et de Développement Agricole au Mali." Synthesis Paper No. 91-01/PRISAS, June 1991. Bamako: PRISAS, Institut du Sahel.
- Dioné, Josué (1989c). "Policy Dialogue, Market Reform and Food Security in Mali and the Sahel." In M. Rukini, G. Mudimu and T.S. Jayne, eds., Food Security Policies in the SADCC Region, proceedings of the Fifth Annual Conference on Food Security Research in Southern Africa, 16-18 October 1989, pp. 143-170. Harare: UZ/MSU Food Security Research Project, Dept. of Ag. Economics and Extension.
- Dioné, Josué (1990b). "Libéralisation des Economies et des Echanges et Sécurité Alimentaire au Sahel." Invited paper at the International Colloquim on "How to Feed the World? Food Policies in a Context of Liberalization of Economies and Trade," sponsored by SOLAGRAL, Paris, France, 26-28 June 1990. Working Paper No. DT 90-02/PRISAS.
- Dioné, Josué (1990c). "Elargissement des Espaces d'Echanges et Stablisation des Marchés Alimentaires au Sahel." Invited paper at the International Seminar on "The Future of Agriculture in Sahelian Countries," sponsored by the Club du Sahel and CIRAD, Montpellier, France, 12-14 September 1990. Working Paper No. DT 90-03/PRISAS.

- Dioné, Josué (1990d). "Sécurité Alimentaire au Sahel: Point sur les Etudes et Projet d'Agenda de Recherche." Research Paper No. DR 90-02/PRISAS, October 1990. Bamako: PRISAS, Institut du Sahel.
- Dioné, Josué (1991a). "Contexte Macroéconomique et Perspectives de Croissance Agricole au Sahel." Invited paper at the Sahel Regional Agricultural Research Workshop, sponsored by the Special Program for African Agricultural Research (SPAAR) of the World Bank, Bamako, Mali, 6-11 January, 1991. Working Paper No. DT 91-01/PRISAS.
- Dioné, Josué (1991b). "Socio-Economic Development Challenges in the Sahel: Implications for Agriculture and Agricultural Research." Working Paper No. 91-02/PRISAS, April 1991. Draft Contribution for the INSAH/SPAAR Framework of Action for Revitalizing Agricultural Research in the Sahel. Bamako: PRISAS, Institut du Sahel.
- Institut du Sahel (1990a). "Stratégie et Programmation quinquennale (1990-1994): "Programmes de Recherches sur le Transfert de Technologies et le Secteur Informel." Revised version of the "Technology transfer" and "Informal Sector" sub-components of the Socio-Economic Research Component of INSAH's Five-Year (1990-1994) Program. INSAH/DRMA/PRISAS - 06/90.
- Institut du Sahel (1990b). "Cadre Conceptuel d'Intégration du Programme Quinquennal (1990-1994) en Matière de Socio-Economie." Concept Paper integrating the "Food Security," "Technology Transfer" and "Informal Sector" sub-components of the Socio-Economic Research Component of INSAH's Five-year (1990-1994) Program.
- Institut du Sahel (1990d). "Cadre Conceptuel pour la Définition d'un Projet d'Appui de l'USAID au Programme Quinquennal de l'INSAH." Concept Paper for a USAID Support Project to INSAH's Five-Year (1990-1994) Program. INSAH/DRMA/PRISAS-11/90.
- Kanté, Bakary (1990). "Opération Triangulaire d'Aide Alimentaire au Sahel. Etude de Case: USA-Mali-Niger: Synthèse Provisoire." Research Paper No. DR 90-03/PRISAS, December 1990. Bamako: PRISAS, Institut du Sahel.
- Kanté, Bakary (1991). "Activités Informelles et Sécurité Alimentaire." Working Paper No. 91-03/PRISAS, July 1991. Bamako: PRISAS, Institut du Sahel.
- PRISAS (1991). "Regional Workshop on Food Security in the Sahel: Review of Past Studies and Priorities for Future Policy Research and Dialogue." Conference Paper No. 91-01/PRISAS, May 1991. Bamako: PRISAS, Institut du Sahel.
- Schmid, A. Allan. "Legal Foundations of the Market: Implications for Africa." French version: "Fondations Juridique du Marché: Conséquences pour l'Afrique." MSU Agricultural Economics Staff Paper No. 92-82, April, 1992.

## **5B. Outputs to Date: Thesis and Related Papers**

## 5C. Journal Articles

- Delgado, C. and T. Reardon. "Do the poor pay more for cereal: results from Burkina", submitted to Economic Development and Cultural Change, June 1992; requested to revise and resubmit November 1992. (Represents collaborative work with IFPRI).
- Delgado, C. and T. Reardon. "Cereal Consumer Shifts and Policy Changes in Developing Countries: General Trends and Case Studies from the West African Semi-Arid Tropics", chapter revised in March 1992, published in the 1991 International Sorghum and Millet CRSP Conference Proceedings, INTSORMIL Publication 92-1; Corpus Christi, Texas, May 1992. (Represents collaborative work with IFPRI).
- Haddad, L. and T. Reardon. "Gender Bias in the Allocation of Resources Within Households in Burkina Faso: A Disaggregated Outlay Equivalent Analysis", Journal of Development Studies, January 1993. (Represents collaborative work with IFPRI).
- Hopkins, J. and T. Reardon, "Potential welfare impacts of trade regime changes on rural households in Niger: A Focus on cross-border trade", presented at the IFPRI/ISRA conference on "Regional integration of agricultural markets in West Africa: Issues for the Sahelian countries", Senegal, Dec. 2-4, 1992. (Represents collaborative work with IFPRI).
- Reardon, T. "Cereal Imports in West Africa and the Potential Impacts of Sahelian Regional Protection", World Development, January 1993. (Represents collaborative work with IFPRI).
- Reardon, T., C. Delgado, T. Thiombiano. Substitution of Imported for Traditional Cereals in Household Food Consumption in Ouagadougou, Burkina Faso. submitted to IFPRI June 1992; requested in November 1992 to revise and resubmit. (Represents collaborative work with IFPRI).
- Reardon, T. and M. Mercado Peters. "Self-financing of rural household cash expenditures in Burkina Faso: The case of net cereal buyers", in Benoit-Cattin, Cuevas, and Griffon (eds.), Finance and Development in West Africa, proceedings of an international conference sponsored by CIRAD, Ohio State University, and University of Ouagadougou, held in Ouagadougou, October 21-25, 1991, revised March 1992; forthcoming as CIRAD publication, Montpellier, France. (Represents collaborative work with IFPRI).
- Reardon, T., A. Fall, V. Kelly, C. Delgado, P. Matlon, O. Badiane, "Is income diversification 'agriculture-led' in the WASAT? Survey evidence and development strategy implications", presented at the International Conference on African Economic Issues", sponsored by the West African Economic Association and the Economic Association of East and Southern Africa, and the World Bank, in Abidjan, Cote d'Ivoire, 11-16 October 1992. (Represents collaborative work with IFPRI).
- Reardon, T., J. Hopkins, and V. Kelly, "Structural adjustment impacts on real incomes and demand patterns in urban and rural households in the Sahel", presented at the 29th Seminar of the European Association of Agricultural Economics, 'Food and Agricultural Policies Under Structural Adjustment', Sept. 21-25, 1992, Hohenheim, Germany. (Represents collaborative work with IFPRI).
- Reardon, T., V. Kelly, B. Diagona, and A. Fall, "Potential welfare impacts of trade regime changes on households in Senegal: Focus on Devaluation", presented at the IFPRI/ISRA conference

on "Regional integration of agricultural markets in West Africa: Issues for the Sahelian countries", Senegal, Dec. 2-4, 1992. (Represents collaborative work with IFPRI).

#### **5D. Outputs to Date: Seminars/Conferences**

Assisted USAID/Africa Bureau and Sahel West Africa Office in organizing and implementing in 1988 and 1989 an annual food security and Sahel cereals workshop in Washington, DC. Drafted and published workshop reports for timely distribution at African and donor policy workshops in the USA and in Lome, West Africa.

Prepared extensive documentation of market information, research and policy diffusion work with OPAM/Mali for the Seminaire du CILSS/Club du Sahel sur les Setemes d'information.

Poverty and Social Policy Division, Africa Technical Department, World Bank (Invited presentation, May 1992: Income diversification in the West African Semi-Arid Tropics). (Represents collaborative work with IFPRI).

Center for Advanced Studies in International Development (CASID), Michigan State University, 1st Special Seminar, Oct. 29, "Income diversification in the West African Semi-Arid Tropics (WASAT): Policy and Development Strategy Implications"

Mali: Institut du Sahel/CILSS (Seminar presentation, March 1992: Effects on rural economies of high transaction costs)

England: Institute for Development Studies, University of Sussex, England (Invited presentation: July 1992: Income diversification in the West African Semi-Arid Tropics)

Germany: University of Hohenheim (Seminar presentations on structural adjustment impacts in Sahel: see paper titles above), 29th Seminar of European Association of Agricultural Economics

Mali: Institut du Sahel/CILSS (Seminar presentation, November 1992: Role and determinants of income diversification in the Sahel: illustration from Burkina Faso)

Cote d'Ivoire: WAEA/ESAEA (Seminar presentation, October 1992: Is income diversification 'agriculture-led' in the WASAT? Survey evidence and development strategy implications"

## SECTION XI

### FACT SHEET - NUTRITION STUDY

#### FOOD SECURITY IN AFRICA COOPERATIVE AGREEMENT

Department of Agricultural Economics  
Michigan State University

(Time period: September 1989 - November 1992)

**1. Cooperating Institutions:**

A.I.D./Washington Science and Technology Bureau, Office of Nutrition  
Department of Agricultural Economics, MSU

**2. Researchers Involved:**

Drs. John Staatz, Michael Weber, James Shaffer, MSU and Dr. Tiladidia Thiombiano, Director of CEDRES in Burkina Faso, and visiting scholar at MSU in 1990/91.  
Shelly Sundberg (Ph.D. candidate at Stanford University) and Larry Rubey (Ph.D. candidate at MSU).

**3. Objective of the Research:**

To build upon research undertaken in Mali that links rural household production, consumption, and nutrition information.

**4. Research Approach:**

Conduct more in-depth analyses to determine the major causes of malnutrition in this part of Africa and identify policy measures that can reduce it.

Carry out additional field surveys in Mali to provide complementary data to the original data set.

Develop analyses of similar issues for other countries in Africa using existing secondary information.

Draw implications from such analyses for various government and donor programs such as targeted food subsidies.

Diffuse the results of these analyses to A.I.D. officials, African decision makers, and African food security researchers. This diffusion will include training Sahelian food security researchers in the methods needed to carry out such analyses.

**5A. Outputs to Date: Working Papers**

Rubey, Lawrence M., John M. Staatz and Michael T. Weber. "Workshop Report: Targeting Consumer Food Subsidies and the Role of US Food Aid Programming in Africa." (In Draft) Report of a workshop sponsored by Food and Voluntary Assistance Bureau - A.I.D./Washington, November 21, 1989.

Staatz, John M., Lawrence M. Rubey, Philip N. Steffen, and Shelly Sundberg. "The Scope for Targeted Consumer Food Subsidies in Mali." Paper prepared for a workshop on "Targeted Consumer Food Subside Schemes and the Role of U.S. Food Aid Programming in Africa." Sponsored by USAID, Food for Peace Office. Arlington, Virginia, November 21, 1989. East Lansing: Michigan State University, Department of Agricultural Economics Staff Paper No. 89-116.

Staatz, John M. "Food Security and Agricultural Policy." Paper presented to the Agriculture-Nutrition Workshop sponsored by USAID, Bureau of Science and Technology, Office of Nutrition, Arlington, Virginia, 12-13 February 1990. East Lansing: Michigan State University, Agricultural Economics Staff Paper No. 90-10, 1990.

Staatz, John M., Victoire C. D'Agostino, and Shelly Sundberg. "Measuring Food Security in Africa: Conceptual, Empirical and Policy Issues. Invited Paper Presented at the Annual Meetings of the American Agricultural Economics Association and the Canadian Agricultural Economics and Farm Management Society, Vancouver, British Columbia, August 4-8, 1990. East Lansing: Michigan State University, Agricultural Economics Staff Paper No. 90-50.

#### **5B. Outputs to Date: Thesis and Related Papers**

Sundberg, Shelly, "Ph.D. thesis for degree in Ag. Econ at Stanford is in process, using data collected in collaboration with SESA/MSU Village Studies in Mali.

#### **5C. Outputs to Date: Seminars/Conferences**

Presentations of research results have been made to:

- i. A.I.D./w, Office of Food for Peale, Workshop on Targeted Food Subsidies in Africa (November 1989)
- ii. A.I.D./W, Office of Nutrition, Agriculture Nutrition Linkages Workshop (February 1990)
- iii. American Agricultural Economics Association Annual Meetings (Vancouver, B.C., August, 1990)

## SECTION XII

### FACT SHEET - AGRICULTURAL TECHNOLOGY ASSESSMENT STUDY

#### FOOD SECURITY IN AFRICA COOPERATIVE AGREEMENT

Department of Agricultural Economics  
Michigan State University

(Time period: January 1990 - November 1992)

#### 1. Cooperating Institutions:

A.I.D./Africa Bureau, Office of Analysis, Research and Technical Support; Food, Agriculture and Resource Analysis Division

USAID Missions and Collaborating Institutions:

- USAID/Yaoundé
  - *Institut de Recherches Agronomiques (IRA)*
  - National Cereal Research and Extension Project (NCRE)
  - Purdue University Bean/Cowpea CRSP team
  - Bean/Cowpea CRSP Management Office at Michigan State University.
- USAID/Nairobi
  - Kenya Agricultural Research Institute (KARI)
- USAID/Lilongwe
- USAID/Bamako
  - *Institut d'Economie Rurale, Département de Planification et Economie Rurale (IER/DPAER)*
- USAID/Niamey
  - *Institut National de la Recherche Agronomique du Niger (INRAN)*
  - International Service for National Agricultural Research (ISNAR)
- USAID/Kampala
  - Makerere University, Faculty of Agriculture and Forestry (MUFAF)
  - Ministry of Agriculture, Animal Industries and Fisheries (MOAAIF)
  - Manpower for Agricultural Development Project (MFAD)
- USAID/Lusaka
  - Ministry of Agriculture, Food and Fisheries (MOAFF)
  - Rural Development Studies Bureau (RDSB), University of Zambia

#### 2. Researchers Involved:

Cameroon: Georges Dimithé, (IRA); James Sterns (MSU In-Country Researcher)

Kenya: Daniel Karanja, (KARI), David Makanda (IDS), Valentina Mazzucato (MSU/ISNAR)

Malawi: James Oehmke

Mali: Dr. Bino Témé, Abadou Diarre, Sidi Diallow, Mme. Bouré Assa Kanti, (IER/DPER);  
Duncan Boughton and Bruno Henry de Frahan (MSU In-Country Researchers)

Niger: Samba Ly, (INRAN); Valentina Mazzucato (ISNAR and MSU In-Country Researcher)

Uganda: Bernard Bashaasha, Elizabeth Balirwa, Godfrey Turiho-Habwe (MUFAF); Rita Laker-Ojok (MSU In-Country Researcher)  
Zambia: George M. Chitalu, (RDSB), Sylvester M. Kalonge (MOAFF); Julie Howard (MSU In-Country Researcher)  
MSU Campus Backstop: Drs. Jim Oehmke, Eric Crawford, Richard Bernsten, John Staatz, and Carl Eicher

#### **Objective of the Research:**

Critically review the literature on *ex post* and *ex ante* evaluation of agricultural research with emphasis on implications for Africa and methodologies applicable to Africa.

Assess the potential for application of current methodologies to evaluate African agricultural research.

Collaborate with staff of AFR/ARTS/FARA to select and design research programs in a number of African countries on the impacts of investments in agricultural research.

Undertake other selected activities to evaluate the effects of alternative investments in agricultural research.

#### **4. Research Approach:**

Following the review of literature and a workshop to discuss methods of choosing and undertaking the country studies, three countries (Kenya, Malawi, Mali) were chosen for Phase I studies, and four other countries (Cameroon, Niger, Uganda, Zambia) were chosen for Phase II studies. Short-term studies (five months or less) were conducted in Cameroon, Kenya (maize), Malawi, and Niger; long-term studies (twelve months or more) were conducted in Kenya (wheat), Mali, Uganda, and Zambia.

#### **5A. Outputs to Date: Working Papers (General, and Grouped by Country)**

##### **General:**

Choe, Y. C., and J. F. Oehmke. "Dynamic Analysis of Returns to Research I: A Time Series Methodology." Dept. of Ag. Econ., MSU. 1991.

Daniels, Lisa, et al. "Assessment of Agricultural Research: Ex-Post, Ex-Ante, and Needed Methodologies." Paper presented at A.I.D./Washington Africa Bureau (TR/ARD) sponsored workshop on returns to investment in agricultural research, April 24-25, 1990, Washington, DC.

Daniels, Lisa, et al. "The Impact of Agricultural Research: A Review of the Ex-Post Assessment Literature With Implications For Africa" MSU International Development Paper (Draft). East Lansing: Michigan State University, Department of Agricultural Economics, 1990.

Oehmke, James F. "Technology, Impact and Agricultural Transformation: Lessons Learned from Impact Assessments." Paper presented at the Symposium on the Impact of Technology on Agricultural Transformation in Africa.



Kangasniemi, J., and B. Kupfuma. "Minutes: Technology Assessment Workshop, June 17-21, 1991, Michigan State University, Department of Agricultural Economics," Dept. of Ag. Econ., MSU. 1991.

Oehmke, James F., and Eric W. Crawford. "The Impact of Agricultural Technology in Sub-Saharan Africa: A Synthesis of Symposium Findings." Staff Paper No. 92-83. Dept. of Ag. Econ., MSU. December 1992.

Oehmke, James F., and Eric W. Crawford. "Evaluating the Impacts of Selected Investments in Agricultural Technology in Sub-Saharan Africa." Draft for AID Evaluation News. Staff Paper No. 92-84. Dept. of Ag. Econ., MSU. December 1992.

Oehmke, James F., and James A. Sterns. "Assessing Returns to Research: Implications for Sub-Saharan Africa," MSU Staff Paper No. 92-43.

### **Cameroon:**

Sterns, James A., and Richard Bernsten. "Assessing the Impact of Cowpea Research and Extension in Northern Cameroon: Lessons Learned." Proceedings of the Symposium on the Impact of Technology on Agricultural Transformation in Africa, Washington D.C., October 14-16, 1992.

Sterns, James A., and Richard Bernsten. "Assessing the Impact of Cowpea and Sorghum Research and Extension: Lessons Learned in Northern Cameroon." Working Paper (Draft), December 9, 1992.

### **Kenya:**

Choe, Y. C. and James F. Oehmke. "Dynamic Analysis of Returns to Research II: An Application to Kenyan Maize." MSU Staff Paper No. 92-55.

Karanja, Daniel. "The Payoff to Maize Research in Kenya: An Institutional and Economic Analysis." Working Paper, Department of Agricultural Economics, Michigan State University, March, 1992.

Karanja, Daniel. "Wheat Research in Kenya: The Challenge Ahead." Dept. of Ag. Econ., MSU. 1992.

Makau, Boniface P. "The History of Wheat Research in Kenya." Nairobi, 1991.

### **Malawi:**

Oehmke, J. F. "Assessing the Impacts of Malawian Maize Research." Dept. of Ag. Econ., MSU. 1991.

### **Mali:**

Boughton, Duncan. "The Impact of Maize Research in Mali." Paper presented at the Symposium on the Impact of Technology on Agricultural Transformation in Africa, Washington, D.C., October 14-16, 1992.

Boughton, Duncan, and Henry de Frahan, Bruno. "Agricultural Research Impact Assessment: The Case of Maize Technology Adoption in Southern Mali." November 1992.

Boughton, Duncan and Témé, Bino. "Farming Systems and Markets - Combining Analytical Frameworks for Development of Commodity Subsectors: The Case of Maize in Southern Mali." Selected Paper, 12th Annual Farming Systems Symposium, The Association for Farming Systems Research/Extension," East Lansing, September, 1992.

Témé, Bino and Boughton, Duncan. "Preliminary Analysis of the Maize Subsector and Principal Questions." French Version: "*Analyse préliminaire sur la filière maïs et principales interrogations.*" Ministère de l'Agriculture, de l'Élevage et de l'Environnement, Institut d'Économie Rurale, Département de Planification Agricole et Économie Rurale. Comité Technique du Programme Systèmes de Production et Économie Rurale. Bamako: April, 1992.

#### **Niger:**

Mazzucato, Valentina and Ly, Samba. "An Economic Analysis of Research and Technology Transfer of Millet, Sorghum and Cowpeas in Niger." The Hague, Netherlands: ISNAR. November 1992.

Mazzucato, Valentina and Ly, Samba. "An Economic Analysis of Research and Technology Transfer of Millet, Sorghum and Cowpeas in Niger: Issues Raised." Paper presented at the Symposium on the Impact of Technology on Agricultural Transformation in Africa, Washington, D.C., October 14-16, 1992.

#### **Uganda:**

Laker-Ojok, Rita. "A Preliminary Assessment of the On-Farm Research Into Maize, Soybeans and Sunflower in Uganda Which Was Sponsored by USAID Under the MFAD Project." July 1992.

Laker-Ojok, Rita. "The Impact of USAID Supported Research on Maize and Oilseeds in Uganda." Paper presented at the Symposium on the Impact of Technology on Agricultural Transformation in Africa, Washington, D.C., October 14-16, 1992.

Laker-Ojok, Rita. "The Rate of Return to Agricultural Research in Uganda: The Case of Oilseeds and Maize." Department of Agricultural Economics, Michigan State University, November, 1992.

Balirwa, Elizabeth. "Maize Research and Production in Uganda." July 1992.

Bashaasha, Bernard. "Soybean Research in Uganda." June 1992.

Turiho-Habwe, Godfrey. "The Accomplishments and Constraints of Sunflower Research in Uganda." July 1992.

**Zambia:**

Howard, Julie. "The Impact of Maize Research in Zambia: Methodology and Preliminary Results." Paper presented at the SADCC/ICRISAT Sorghum and Millet Improvement Program Research Planning Meetings, September 21-26, 1992, Bulawayo, Zimbabwe.

Howard, Julie, Chitalu, George, and Kalonge, Sylvester. "The Impact of Investments in Maize Research and Dissemination in Zambia: Preliminary Results." Paper presented at the Symposium on the Impact of Technology on Agricultural Transformation in Africa, Washington, D.C., October 14-16, 1992.

**5B. Outputs to Date: Dissertations and Theses**

Makanda, David. "Research and Policy Impacts on the Kenyan Wheat Sector." Ph.D. Dissertation, Department of Agricultural Economics, Michigan State University. December, 1992.

Mazzucato, Valentina. "Non-Research Policy Effects on the Rate of Return to Maize Research in Kenya: 1955-88." M.S. Thesis, Department of Agricultural Economics, Michigan State University. 1992.

Sterns, James A. "Ex Post Assessments of Investments in Cameroon's Cowpea and Sorghum Research and Extension Systems." M.S. Thesis, Department of Agricultural Economics, Michigan State University. December, 1992.

**5C. Outputs to Date: Seminars/Conferences****Briefings:**

Briefings on the results of the impact studies were given to USAID Missions and local collaborating institutions by MSU in-country researchers in Cameroon (August 1991), Niger (June 1992), Uganda (July 1992), and Zambia (November 1992). Further briefings are scheduled for Kenya (January, 1993) and Uganda (January, 1993).

**Overall:**

Presented results of literature review at USAID-sponsored workshop on returns to agricultural research, Washington, DC, April 24-25, 1990.

Conducted workshop on issues and methods of assessing the impact of agricultural research, Dept. of Ag. Econ., MSU, June 1991.

Organized, with AID/ARTS/FARA, the Symposium on the Impact of Technology on Agricultural Transformation, Washington, D.C., October 14-16, 1992.

Presentation of the draft symposium synthesis report to AID/ARTS/FARA by James Oehmke, Washington, D.C., November 24, 1992.

Presentation of the symposium synthesis, Kenya wheat and Kenya maize studies by Oehmke, Makanda and Karanja, respectively. REDSO Conference on Regional Networking in Agricultural Research, Nairobi, Kenya, January 18-22, 1993.