



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search  
<http://ageconsearch.umn.edu>  
[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

PROCEEDINGS OF THE  
24<sup>TH</sup> WEST INDIES  
AGRICULTURAL ECONOMICS  
CONFERENCE

AGRICULTURE,  
TRADE AND  
THE ENVIRONMENT IN  
THE CARIBBEAN  
AND THE AMERICAS

RANJIT H. SINGH  
**EDITOR**

*The Caribbean Agro-Economic Society  
The University of the West Indies  
St. Augustine, Trinidad and Tobago*

December 2003

**Agriculture, Trade and the Environment in the Caribbean  
and the Americas**

**PROCEEDINGS OF THE TWENTY-FOURTH WEST INDIES  
AGRICULTURAL ECONOMICS CONFERENCE  
(Grenada, July 9-13, 2002)**

Copyright © December 2003 by the Department of Agricultural Economics and Extension. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopy, recording or otherwise, without the prior consent of the publisher.

**ISBN:** 976-634-001-3

**Publication Data:**

**Main Title:** Proceedings of the Twenty-Fourth West Indies Agricultural Economics

**Publisher:** Caribbean Agro-Economic Society  
c/o The Secretariat  
Department of Agricultural Economics & Extension  
The University of the West Indies  
St. Augustine  
Republic of Trinidad & Tobago

**Printed in:** St. Augustine, Republic of Trinidad & Tobago

**Publication Date:** December 2003

---

## Editorial

**Ranjit H. Singh**

*Editor, Caribbean Agro-Economic Society*

---

*The Caribbean Agro-Economic Society is pleased to issue the Proceedings of its Twenty-fourth West Indies Agricultural Economics Conference, held July 9<sup>th</sup> – 13<sup>th</sup>, 2002 in the Spice Isle at the luxurious Rex Grenadian Resort. Our 24<sup>th</sup> Conference was co-hosted by the Ministry of Agriculture, Lands, Forestry and Fisheries of the Government of Grenada and the Department of Agricultural Economics and Extension, The University of the West Indies, St Augustine.*

*Our 24<sup>th</sup> Conference continued to focus on what has become the dominant policy influences on the Regional Agricultural Sector since the advent of the WTO in 1995 – that is, the policy influences arising from the various trade agreements, including those relating to various trading blocs. Whereas the 23<sup>rd</sup> Conference examined the provisions of the WTO and the FTAA trade agreements against development paradigms for Latin America and the Caribbean, the 24<sup>th</sup> Conference focused more specifically on the influences/potential influences of the newly created/emerging trade policy environment. Presenters sought to address issues such as Food Security, Sanitary and Phyto-sanitary regulations, HACCP and broader developmental issues.*

*The theme chosen for the 24<sup>th</sup> Conference was Agriculture, Trade and the Environment in the Caribbean and the Americas. Nine plenary sessions were held. Highlights of the Conference included an Opening Ceremony and reception, with The Hon. Claris Charles, Minister of Agriculture, Lands, Forestry and Fisheries, delivering the feature address; the day visit to the sister isle of Carriacou which included a panel discussion with local farmers; a Special Session on Grenada's Agriculture and a field trip.*

*Presenters highlighted the key issues arising from the various trade agreements – the WTO, FTAA, Cotonou and the CSME – and their implications for regional agriculture. The papers offered strategies and mechanisms for the region to collectively address the challenges being faced. It addressed the important issues of food and nutrition security and food safety as well the need for effective regulatory SPS mechanisms and the systems that permit traceability and quality assurance.*

*Participants also examined the implications of "free trade" on the environment. Given the fragile ecosystems that characterize the Caribbean, participants proposed sustainable pathways to development and emphasized the need to be vigilant in protecting our environmental assets.*

*Our presenters have demonstrated vast expertise and passion for their profession. They have reminded us that change is inevitable and have charted strategies for coping with the*

*global policy challenges that the Region's agriculture faces. We thank them all for their contributions.*

*The Society also expresses its deep gratitude to the several persons in the Department of Agricultural Economics and Extension who have contributed to the production of this publication. Special thanks to Dr. S.C. Birla who assisted with the review of the manuscripts. Our appreciation is also extended to Hyacinth Mohammed, Albert Mahabir, Martha Spence and Indira Ousman for typesetting, printing and the overall coordination of the production process.*

***Ranjit H. Singh***

---

## *Welcoming Remarks*

**Carlisle A. Pemberton**

*President, Caribbean Agro-Economic Society*

---

*Thank you, Mr. Chairman, Honorary Claris Charles, Minister of Agriculture, Lands, Forestry and Fisheries, other Ministers of Government, Grenada, Members of Parliament, Grenada, Members of the Diplomatic Corps, Dr. Bill Messina, Professor Tim Josling, Mr. Aaron Francis, Coordinator, Local Organizing Committee, Grenada, Ladies and Gentlemen.*

*My simple task here today is to welcome you all to this the 24<sup>th</sup> West Indies Agricultural Economics Conference.*

*Special welcome to you, Madam Minister.*

*This is the Third Conference to be held in Grenada – the 7<sup>th</sup> Conference was held in April 1972 and the 14<sup>th</sup> Conference in 1979 and now the 24<sup>th</sup> Conference is being held in 2002.*

*The Caribbean Agro-Economic Society (CAES) started in April 1976 at the 11<sup>th</sup> West Indies Agricultural Economics Conference in Dominica. The major activities of the CAES have been the holding of the conferences, publishing a journal "Farm and Business" and also publishing conference proceedings. These publications attempted to influence policy research and development in Agriculture in the Region.*

*The objectives of the Society are to increase professionalism in agricultural economics and related disciplines in the Caribbean. There is strong membership from the CARICOM countries. Special welcome to this Conference to participants from the Region, including Suriname and Haiti.*

*We also have members from the French Caribbean, Guadeloupe and special welcome to you also.*

*We also have strong membership and representation from agricultural economists in North America and Canada, who do research on Caribbean problems. A special welcome is extended to you also.*

*We also have strong representation here from regional institutions such as IICA, FAO, The CARICOM Secretariat, CARDI, and Marketing Boards and Planning Divisions in the Regions. Special welcome to you also.*

*We maintain links with ALACEA and IAAE, The International Association of Agricultural Economists. With respect to IAAE, special welcome to Walt Armbruster of the Executive of IAAE, The Department of Agricultural Economics and Extension, UWI, one of the co-hosts of this Conference deserves special thanks. We welcome the members*

*of the Department and especially the Head, Dr. Ranjit Singh who also is Director of Publications of the Society. Special welcome also to other members of staff at The University of the West Indies (UWI), especially from the Department of Food Production, the Department of Economics, The Institute of International Relations and the Faculty of Engineering.*

*And of course, special welcome to our members from all the Ministries of Agriculture throughout the CARICOM Regions including Belize, The Bahamas, the OECS, Barbados, Jamaica, Trinidad and Tobago and, of course our host, Grenada.*

*We plan to revitalize the Society in the coming years, but I will leave discussions on these matters for the Business Meeting of the Society tomorrow.*

*Special welcome to all our co-hosts and we thank them for their collaboration to stage this Conference – First, The Government of Grenada represented by you, Madam Minister, we express our special thanks. To the Food and Resource Economics Department at the University of Florida, represented by its Chairman, Professor William Messina and other members of staff, special welcome.*

*Again, special welcome to the Department of Agricultural Economics and Extension, UWI. And special thanks to Mr. Aaron François, Conference Co-ordinator of the Grenada Local Organizing Committee.*

*We are off to a good start today and this is due to you participants who have come to Grenada to continue our task of betterment of agriculture and farmers in the Caribbean.*

*Welcome to you all on behalf of the Society.*

---

## *Contents*

---

iii	<b>EDITORIAL</b>
v	<b>WELCOME REMARKS</b>
1	<b>CONTRIBUTED PAPERS:</b>
3	<i>Trudy Lewis:</i> <b>Status of Negotiations in the WTO, Cotonou, FTAA and the CSME</b>
12	<i>Curtis M. Jolly and Abdul Kudos Almarwani</i> <b>The Effects of the FTAA on the Organization of the Eastern Caribbean States</b>
27	<i>Dale Colyer:</i> <b>Environmental Issues in the FTAA</b>
41	<i>Edward A. Evans and Lloyd B. Rankine:</i> <b>The United States Farm Security and Rural Investment Act of 2002: Implications for Caricom Sugar Producers</b>
63	<i>Wendel D.J. Parham:</i> <b>Implications of Modernizing the Sugar Industry of Belize</b>
80	<i>Barrington Hibbert and Carol Johnson-Miller:</i> <b>Measuring the Competitiveness of Sugar</b>
93	<i>Lench Fevrier:</i> <b>The Broiler Industry in St. Lucia: Status, Competitiveness and Development Policies</b>
114	<i>Govind Seepersad:</i> <b>A Trade Competitiveness Study of the Vegetable and Fruit Industry of Trinidad and Tobago</b>



- 
- 124 *Clive Y. Thomas:*  
**Food Security: A Neglected Dimension of Caribbean Agriculture Policy**
- 136 *Ballayram, Beverley Lawrence and Fitzroy Henry:*  
**Agriculture, Food Security and Health in the Caribbean: An Indispensable Link**
- 149 *Jeremy W. Mattson and Won W. Koo:*  
**US Agricultural Trade with Western Hemisphere Countries and the Effect of the Free Trade Area of the Americas**
- 163 *Ashley R. Cain:*  
**"Good Agricultural Practice" – European Union (EU) Food Safety Requirements and the Windward Islands banana Industries**
- 175 *Neela Badrie:*  
**Impact of Sanitary and Phytosanitary Agreement on Food Safety and Trade by Developing Countries**
- 191 *Curtis M. Jolly, Glenn Howze, Dennis Shannon, Michael Bannister, Gardy Flaurentin and John Dale "Zach" Lea:*  
**Secondary Adoption of Soil Management Practices in Haiti**
- 201 *Wayne G. Ganpat and Cynthra Persad:*  
**Agriculturists as Environmentalists: The Challenge of Seeing Participatory IPM as an Environmental Innovation for Sustainable Adoption by Farming Communities in the Caribbean**
- 211 *Carl Francis Smith:*  
**Entrepreneurial Opportunities for the Sustainable Use of the Pine Forest Resources in The Bahamas**
- 220 *E. J. Peters:*  
**Sustainable Agriculture: Livestock Management Policies for Minimizing the Negative Impacts of Stray Livestock in Grenada, Carriacou, and Petite Martinique**
- 234 *Suresh C. Birla:*  
**The West Indies Agricultural Economics Conference Series: A Critical Review of Conference Themes Over the Years**
- 244 *Thackwray Driver and Erica Prentice-Pierre:*  
**Reforming the Agricultural Land Rental Market in Trinidad & Tobago**

- 
- 266 *Evangeline Devonish, Carlisle A. Pemberton, Sarojini Ragbir and David Dolly:*  
**Record Keeping Among Small Farmers in Barbados**
- 276 *Marie-Françoise Zébus, Gisèle Alexandre, Jean-Louis Diman, Edouard Despois, and Alain Xandé:*  
**Agricultural Development and Regulation: The Case of Pig Rearing in Guadeloupe, French West Indies**
- 293 *Lorraine L. Niba:*  
**Diversification and Quality Optimization of Tropical Root Starches for the Global Food Starch Industry**
- 302 *Carlisle A. Pemberton and Hazel Patterson-Andrews:*  
**Potential of Agriculture to Meet the 'Fish Protein' Consumption in Trinidad and Tobago**
- 319 *Wilhelmina Kissoonsingh:*  
**Perception of and Interest in Distance Education in Agriculture among Extension Agents in Trinidad and Tobago**
- 331 *Malachy Pilgrim Dottin:*  
**Perception of and Interest in Distance Education in Agriculture among Extension**
- 342 *Michelle L. Eley and Joyce E. Allen-Smith:*  
**Farmers' Markets in the Dominican Republic: Producers' Characteristics and Perspectives**
- 351 **ABSTRACTS**
- 361 **LIST OF PARTICIPANTS**