“Protected agriculture: a technological option for competitiveness of the Caribbean”

“Agricultura bajo ambiente protegido: una opción tecnológica para la competitividad en el Caribe”

“Agriculture sous ambiance protégée: une option technologique pour la compétitivité de las Caraïbe”

United States Department of Agriculture,
T-STAR Sponsored Invasive Species Symposium

Toward a Collective Safeguarding System for the Greater Caribbean Region:
Assessing Accomplishments since the first Symposium in Grenada (2003)
and Coping with Current Threats to the Region

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SESSION 1: TOWARD SAFEGUARDING THE GREATER CARIBBEAN: ASSESSMENT OF ACCOMPLISHMENTS SINCE GRENADA AND WHAT STILL NEEDS TO BE DONE

ACCOMPLISHMENTS SINCE THE FIRST SYMPOSIUM ON INVASIVE SPECIES IN GRENADA, 2003

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Editors’ note. Dr. William F. Brown was invited to give this talk because, as a former Assistant Dean for Research at the University of Florida in charge of the T-STAR Program, he was the administrative driving force that propelled the university’s invasive species thrust in the Greater Caribbean. Dr. Brown was especially concerned that a policy framework on coping with invasive species was needed in the Region to assure that research results would be implemented to greatly ameliorate the problem.

Figure 1. This retrospective presentation is intended to highlight the main accomplishments of the international interagency thrust on invasive species in the Greater Caribbean Region. The CFCS Board of Directors took the decision to hold a symposium on invasive species at the 38th annual meeting of the Society in Martinique. The Board tasked Dr. Brown with organizing the first invasive species symposium in Grenada in 2003.
TYLCVirus first appeared in Cuba in 1987 and soon thereafter in Haiti and the Dominican Republic. By 1997, TYLCV had reached Florida, where it is transmitted by Bemisia tabaci biotype B whiteflies, which had arrived in about 1985. Florida Tomato Growers spend about $800 per year to prevent severe outbreaks.

Figure 2. The advent of tomato yellow leaf curl virus from the Middle East to the Caribbean, and its subsequent rapid dispersion across the Region exemplifies the fate of many devastating invasive species. Control of many of these species each cost tens of millions of dollars annually.

Figure 3. The 1986–1994 talks on the General Agreement on Tariffs and Trade on agricultural and other products resulted in reductions in agricultural subsidies and the adoption of the Sanitary and Phytosanitary Agreement. The development resulted in a tremendous surge in international trade in perishable agricultural products and, unintentionally, in the movement of invasive species.
Asian soybean rust is caused by two species of the fungus *Phakopsora*. This fungus was limited to SE Asia & the Pacific. It reached Africa in 1997 and South America in 2001. Hurricane Ivan brought the spores from Venezuela to Florida in 2004. Now it is a problem in the US Midwest.

Figure 4. Once an adventive species becomes established at one site in the Greater Caribbean, the natural spread by hurricanes, less violent winds, and ocean currents may contribute its spread throughout the Region.

Average annual spending for emergency programs by APHIS during 1989–2002 increased from US$6.4 million to US$335 million. The program to eradicate citrus canker failed because a lawsuit filed by urban homeowners caused a three-year delay, and four hurricanes spread the pathogen widely throughout Florida.

Figure 5. To cope with the recent surge in the establishment of invasive species, some of which are truly devastating requires governments—in some instances—to fund very expensive regulatory and control programs, as well as research and methods development. Because of the advent of citrus canker in 1995, Florida’s lime industry was destroyed, and the more recent arrival of the red bay ambrosia beetle and laurel wilt fungus threaten to destroy the avocado industry.
Figure 6. The Caribbean Region faces difficult challenges in mounting an effective program against invasive species. At the root has been the failure to implement a Regional Plant Protection Organization because many policy makers feel that agriculture is unimportant since food can be imported cheaply, and fisheries and tourism seem less vulnerable.

Figure 7. Coping with the unceasing onslaught of invasive species requires the existing capacity for early detection of the arrival somewhere in the Region of an invasive species, rapid communication of this information throughout the Region, and the capacity for rapid, appropriate and effective response. This requires transparency and very effective international cooperation.
Figure 8. In 1999, the Caribbean Basin Administrative Group of T-STAR convened a workshop to scope out the invasive species problem in the Greater Caribbean Region. The workshop was well attended and challenged policy makers to address this serious problem.

Figure 9. Correspondingly, the Pacific Basin Administrative Group of T-STAR convened a workshop in Guam to scope out the invasive species problem in the Pacific Region.
Figure 10. In response to the two workshops, the U.S. Congress appropriated additional funds to the T-STAR program. It was understood that these research funds should delve into researchable policy gaps, institutional gaps, and biology and control gaps with respect to invasive species.

Figure 11. Concurrently, a number of related thrusts were being taken by various institutions in the Caribbean Region. At the 2002 CFCS annual meeting in Martinique, the Board of Directors asked the University of Florida to take the lead in planning a symposium on invasive species at the 2003 CFCS meeting in Grenada.
Figure 12. The Symposium in Grenada was attended by three key leaders in the Region (i.e., Ambassador Byron Blake of CARICOM, Gene Pollard of FAO, and Arlington Chesney of IICA). Immediately following the symposium, Ambassador Blake convened a follow-up working group.

Figure 13. Ambassador Blake divided the Caribbean Invasive Species Working Group (CISWG) into two subgroups (i.e., one to develop a Regional policy, and the other to identify research and technical needs).
Figure 14. Over a period of many months, the policy subgroup elaborated the Caribbean Regional Invasive Species Intervention Strategy (CRISIS). The CRISIS document defined appropriate cooperative regional actions, as well as the steps needed to strengthen the phytosanitary capabilities of each country or other political entity in the Region.

Figure 15. Thanks to Ambassador Blake’s foresight, membership in CISWG from the beginning was much broader than just regulatory agencies.
Caribbean Invasive Species Working Group

2004, Trinidad

“Facilitating Safer US-Caribbean Trade: Invasive Species Issues”

Major outcomes . . . . .

- “Caribbean Regional Invasive Species Intervention Strategy (CRISIS)” completed
- Identified CAHFSA as lead agency for safeguarding, linked to other Caribbean and regional entities

Figure 16. In June 2004, the University of Florida and CARDI took the lead in convening a workshop in Port of Spain, Trinidad on “Facilitating Safer US-Caribbean Trade: Invasive Species Issues.”

Figure 17. The Workshop was attended by representatives of most countries in the Greater Caribbean Region. Consequently, it was possible to achieve a very broad consensus on the importance of the invasive species problem and on the way forward. A resolution was sent to governments in the Greater Caribbean Region.
Figure 18. Some months after the Grenada Meeting, COTED instructed CISWG to develop fundable projects on (i) timely internet-based tracking of invasive past introduction and interceptions and (ii) development of a Caribbean pest—and disease—diagnostic system based on distance digital image sharing and internet-based communications. CISWG combined these two thrusts in the Caribbean Invasive Species Surveillance and Information Program (CISSIP).

Figure 19. CISSIP has four major components: (i) Caribbean Pest Diagnostic Network (CPDN) [current name]; (ii) Invasive Species Information Program; (iii) Pest Survey and Inspection Program; and (iv) Public Awareness Program. Over five years, CISSIP was estimated to cost about US$16 million. The plan was to implement CISSIP in two phases.
Figure 20. CISSIP was discussed in detail with high-level Caribbean country/territory representatives in a special meeting in Port of Spain. Agreement was reached to attempt to first launch CISSIP as 6-Phase, 1 country, and two years later as 5-Phase, 2 countries. Having reached this consensus, CISWG began to develop a strategy to secure grant funding for CISSIP. However, a decision not to fund CISSIP was taken at the 2007 Agriculture Donors Conference.

Figure 21. The Honorable Roger Clarke, Minister of Agriculture of Jamaica, explained how the “Caribbean Invasive Species Initiative” was indispensible to the Jagdeo Initiative to transform agriculture in the Caribbean Region and to progress toward the UN Millennium Development Goals.
Caribbean Invasive Species Working Group

2007, Trinidad

Major outcomes . . . . .

- Approved the formation of the Caribbean Plant Health Directors Forum
  - Leadership provided by CARICOM, USDA-APHIS, CABI, CIRAD, FAO & IICA.
  - Development of workgroups surrounding specific pests.

Figure 22. At a meeting in Port of Spain, CISWG approved a proposal to launch the Caribbean Plant Health Director Forum. The Forum brings together key officials from all governments in the Region for the purpose of developing harmonized policies and programs against invasive species.

Caribbean Food Crops Society Meeting

2008, Miami Beach FL

“The Role of the Caribbean Invasive Species Surveillance and Information Program (CISSIP) in the Regional Agriculture Repositioning Strategy”

Major outcomes . . . .

- Implementation of CISSIP in its component parts
  - Caribbean Plant Diagnostic Network
- First report from Caribbean Plant Health Directors Forum

Figure 23. Following the 5th T-STAR Symposium on invasive species, CARICOM and CARDI took the position that an effort should be made to launch one or two components of CISSIP. Therefore an effort was made to patch together an emerging Caribbean Plant Diagnostic Network, which in its first phase would link Florida, the Dominican Republic, Haiti, and Puerto Rico. Also at this Symposium, the work of the Caribbean Plant Health Directors Form was encouraged.
The Caribbean Plant Health Directors Forum has been fulfilling some of the functions of a Regional Plant Protection Organization. The Forum makes excellent use of Technical Working Groups.

Figure 24.

The 2009 Invasive Species Symposium in St. Kitts and Nevis focused on the threat of invasive species in the quest to diversity agriculture and to improve food security in the Caribbean. Also significant progress in developing the Caribbean Plant Diagnostic Network was reported.

Figure 25.
Organismo Internacional Regional de Sanidad Agropecuaria (OIRSA) joined CISWG, and the Executive Director of OIRSA participated in the CFCS meeting and Invasive Species Symposium.

Figure 26. At the 2010 Invasive Species Symposium in the Dominican Republic, the outstanding progress of the host country in developing eight diagnostic laboratories linked by distance diagnostic and identification system was noted, as well as further progress in developing the CPDN. In addition, the launching of the Caribbean Agricultural Health and Food Safety Agency (CAHFSA), with headquarters in Suriname, was announced. It is anticipated that CAHFSA will serve as the umbrella organization to coordinate the Caribbean Invasive Species Thrust.

Figure 27. To summarize, significant accomplishments since the 2003 meeting in Grenada include agreement on a Regional Safeguarding Policy (CRISIS), the formation of the CDHDF, the launching of the CPDN; major strengthening of phytosanitary programs by the Dominican Republic, the French Overseas Territories, and the United States. The development of Regional Safeguarding Policy and Institutional Requirements is enabling science to be implemented against invasives.
Figure 28. With agreement on a Regional Safeguarding Strategy (CRISIS) and the major approaches to implement this strategy having been defined in part by CISSIP, the stage has been set for CAHFSA to provide the central leadership challenge to turn around the Region’s losing battle against invasive species. Another Donors Conference is needed to provide resources for a much needed turn around.