

Handling & Processing Section

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AGRO PROCESSING DEVELOPMENT (ST. KITTS AND NEVIS)

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Abstract. The authors assisted the Inter-American Institute for Cooperation on Agriculture (IICA) in determining and addressing the needs of the agro-industry in St. Kitts/Nevis with primary attention to the existing and potential small processors. The aim being to add value to local food items and increase the safety, quality, production efficiency, and market appeal of existing and potential processed products. Local self-sufficiency was the initial goal, with inter-island export a distant and much more ambitious task. This presentation discusses the assessment and recommendations and addresses the potential for future assistance opportunities in the Caribbean region.

The Florida Association of Voluntary Agencies for Caribbean Action, Inc. (FAVA/CA 2001, <http://www.favaca.org>), is a private not for profit organization formed in 1981 by Florida Governor Bob Graham. FAVA/CA provides short-term training and technical assistance in response to requests from non-governmental and governmental organizations in Central America and the Caribbean through the following programs: Seniors in Service Overseas, Farmer-to-Farmer, Professional Exchange Program, Disaster Management Project, Capacity-Building, University Studios, Environmental Connection, Association Ambassadors, Florida-Haiti Initiative, Health and Social Partners, Youth Alliance, and Women's Leadership Project. FAVA/CA's Florida International Volunteer Corps recruits expert volunteer consultants from around Florida to provide training and technical assistance and to improve environmental, social and economic conditions in the region.

FAVA/CA contacted the authors with a request provide assistance to IICA (Caribbean Regional Centre 2002, <http://www.agroinfo.org/caribbean/iicacarc/>). This Caribbean-wide organization promotes agriculture development and commerce within and among island states and nations on the Caribbean.

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In St. Kitts IICA cooperates with the Small Enterprise Development Unit (SEDU). In Nevis the cooperating agency was the Ministry of Agriculture (NMAG). In the case of IICA and NMAG, the relationships and programs are directed toward promoting cooperation in agricultural and agro-industry development, working primarily with small scale, cottage industry. SEDU has additional non-agriculture programs, in which the authors were not involved.

The scope of the work involved assisting IICA in determining and addressing the needs of the agro-industry in St. Kitts/Nevis with primary attention to the existing and potential small processors. The aim being to add value to local food items and increase the safety, quality, production efficiency, and market appeal of existing and potential processed products. Local self-sufficiency was the initial goal, with inter-island export a distant and much more ambitious task.

IICA's Request for Assistance specified:

1. Conduct an on site assessment/evaluation of 15 agro-processors
2. Develop a training program to address:
 - Fundamentals of processing improvement/improve methodology
 - Presentation and labeling, packaging and closure
 - Quality control
3. Advise on extending shelf-life of products
4. Advise on small-scale equipment to enhance productivity

FAVA/CA did an excellent job of trip coordination prior to, during and after the October 2-6, 2002 visit. The pre-trip correspondence, travelers' preparation and trip arrangements were outstanding. After arrival and until departure, the IICA, SEDU, and NMAG staff provided tremendous planning, transportation and arrangements.

Although the trip was short, all the IICA requests were fulfilled. The day after a night time arrival on St. Kitts, the authors met in the homes with six agro-processors, with another agro-processor that operated a road side market, and visited the new cruise port, a tropical garden tourist attraction and a vegetable and egg packinghouse. These agro-processors produced a variety of products (Figs. 1-4) including pepper sauce, wine, essences, sugar cakes, coconut candy and fudge, hard candy, grated coconut, guava jelly and cheese (candy), tamarind jam, soy sauce, chow-chow, pumpkin bars, peanut products (whole roasted, fried, shelled seasoned), and potato chips. The equipment, preparation procedures, and product packaging materials varied from excellent to less than desirable.



Fig. 1. Sample products at Avis Nathan's small roadside store.



Fig. 3. Vida Casey (standing) with recipes and sample product (Sheela Harris, SEDU, sitting).

The next day, the authors visited two resorts and three grocery stores and discussed the current and potential market for locally produced commodities. All of these organizations were currently using locally produced commodities and indicated a willingness to use additional local products if quality and quantity were consistent. A number of locally produced products were observed in all the grocery stores (Figs. 5-7). The authors were provided with a good overview of the food import shipping procedures which consisted of weekly cargo ships and limited air freight.

After a ferry trip to Nevis and meeting with NMAG personnel, the authors participated in evening meeting with approximately 15 small producers of pepper sauce, jelly, wine, essence, herbs, and cassava cookies (Fig. 8). This meeting consisted of evaluation of products the producers brought to the meeting as well as questions and answers. Again the products and packaging varied from excellent to questionable. Some had established markets with the local resort tourist shop and grocery stores on Nevis. The potential for formation of an effective cooperative in Nevis appears positive. A Nevis honey cooperative formed a few years ago with assistance from FAVA/CA is doing very well.

The following day, the authors visited several hotels/resorts, local grocery stores and an open food market. A number of locally produced products were observed in the gift shop of one large resort.

Result and Discussion

The authors and all parties with whom they met now have a much better idea as to the logistical and training needs of agro processors. The important role of IICA, SEDU, and NMAG was clarified and an action plan was developed. Informative literature was left with IICA for copying and distribution to key individuals and follow-up information (suppliers, web sites, and literature) was provided.

A number of recommendations were made, including:

1. The highest priority was for training in food safety and preservation. The authors were impressed by the food processing and business know-how of many of the individual processors, restaurant managers, hotel executives, and supermarket executives with whom they met. Most



Fig. 2. Veronica Davis' Guava Jams, Jelly processing equipment and supplies.



Fig. 4. James Thompson's packaged peanut products with good U.S. labeled package with good graphics and printing (Uncle Jimmy's brand).



Fig. 5. Veronica Davis' Guava Jams stacked on the floor in Valu-Mart Grocery.



Fig. 7. Numerous pepper sauce brands at Valu-Mart Grocery.

are doing a very good job of processing and/or distributing safe, high quality local items. However, there are a few home processors who do not understand food safety and whose practices and concepts are questionable. For them especially, and for all cottage-scale processors, a comprehensive workshop in the principles and practices of small scale food processing is essential. This would include information on the proper packaging and labeling of processed foods, a need emphasized by marketing authorities. In St. Kitts the sponsoring agency should be the SEDU, assisted by IICA. The MAG, St. Kitts and a government food laboratory (in St. Kitts) were not visited but should be involved in training. In Nevis, the MAG is quite capable of orchestrating workshops. Participation from University of West Indies and appropriate institutions with Agriculture development responsibilities and experience in the Caribbean would be highly desirable.

2. A major goal of training should be to train the trainers. That is, identification of capable individuals in both St. Kitts and Nevis with interest and experience in home

food preservation and providing them with the information and resources to eventually serve local training needs on a continuing basis. This cadre should be encouraged to participate in training activities initially to refresh their food safety/processing skills and later to provide the training. The IICA, SEDU, and NMAG administrators have a good idea as to individuals and organizations with food preservation experience who should be involved in training and as trainers.

3. IICA in cooperation with SEDU in St. Kitts and NMAG in Nevis should encourage and assist local processors in the formation of a cooperative to serve as the focus for small processing agro-industry. All activities—training, equipment/container procurement, and marketing efficiencies—dictate some degree of mutual assistance and cooperation at the community level. It is very difficult for individual processors to achieve economies of scale to serve the potential demand for local processed products. It should be emphasized that only through mutual cooperation can the appreciable potential of the local



Fig. 6. Bob Bates with Mr. Victor Griffith, Valu-Mart Grocery, and Sam Franks, SEDU.



Fig. 8. Augustine Merchant, IICA, Mike Talbot, and Bob Bates at Nevis Agro-processor Meeting.

- small agro-industry be realized. There is a level at which competition among processors is healthy, but industry-wide cooperation is the place to start. The initial impression of the authors is that this will be easier to accomplish in Nevis than in St. Kitts. The authors are aware of contacts and organizations with expertise in forming and operating agriculture cooperatives. Assistance with establishing cooperatives might be available from the Department of Agriculture and Consumers Services (FDACS) and Florida A&M University (FAMU). FDACS has worked with the Florida Sweet Onion Growers Cooperative and Florida Wildflower Growers (Nelson Pugh, pughn@doacs.state.fl.us). FAMU has provided guidance to the successful New North Florida Cooperative, a regional small farmer distribution network with farmers in Alabama, Florida, and Georgia, working to enhance economic opportunities for limited resource farmers through direct sales to local school districts.
4. In relation to processing cooperatives in both islands, the feasibility of establishing Community Food Preservation Centers should be explored. Such centers, common in the U.S. during and after World War II, served as a very effective mechanism for processing excess food crops, training individuals in safe food preservation, and providing markets for these items. The centers spread cost of equipment, containers, and utilities (electricity, steam, water) over many users, thus greatly simplifying logistics for all. Even if commercial processing operations continue at a low level, complementary centers in St. Kitts and Nevis can foster food safety and food self-sufficiency, prevent waste, and make users aware of the untapped potential of processed local foods.
 5. On an individual scale, processors should be provided with sources of equipment, supplies, and packaging. Small processors badly need information on packaging alternatives and small scale equipment for conducting the various food processing operations—slicing, shredding, pureeing, grinding, cooking, pasteurization, etc. Actually, the house ware section of many retail chains, i.e., Sears, Wal-Mart, Target, sells units of the appropriate size for in-kitchen operations. For a larger scale, restaurant supply sources are useful. Some of the literature left by the authors with IICA addresses this need, and additional information was provided. In addition, the authors identified additional sources of equipment, containers, training material for IICA dissemination. Both printed and Internet available material were emphasized, as well as the web sites and listservs of institutions and businesses handling such items.
 6. A number of home processors produce wines from various fruits and vegetables. While the quality of these items varied widely, in general the quality needed improvement and the legal ramifications are unclear. None of the processors had any idea as to the strength of these beverages. Information on wine making and vinegar production was provided. In addition, fruit wine can serve as the starting material for vinegar production. A reliable source of quality vinegar is an essential ingredient in many processed products and local manufacture should be encouraged.
 7. From personal experience it is valuable for in-country counterparts to observe our facilities and operations. The coordinators from IICA and SEDU should have the opportunity to visit the University of Florida and become familiar with resources (facilities, personnel, information media, and community/industry practices) relevant to St. Kitts/Nevis. While it may be outside the scope of FAVA/CA activities, such an orientation visit can be almost as valuable as the authors' initial trip in fostering efficient cooperation and providing long-term benefits to St. Kitts/Nevis.
 8. There are a number of key text and Internet web sites dealing with issues discussed. These texts/sites should be made available for training purposes and as general information for interested parties. Also, IICA and SEDU managers should peruse this information and suggest pertinent material for purchase and web sites for reference, i.e., <http://www.amazon.com>.
 9. From observation and discussions, there is a need for improved handling of perishable commodities like eggs, ice cream, fresh vegetables, fruits, and peanuts.
 10. Assistance with containers and container labels might be available through the Packaging Science Program of the Agricultural and Biological Engineering Department, Institute of Food and Agricultural Sciences, University of Florida. A graduate student research project might be appropriate. Training of selected individuals at the University of Florida is also a potential benefit.
 11. Potential market locations must be identified and developed, i.e., grocery stores, hotels/resorts, airport, tourist sites (on St. Kitts the Gardens of Romney Manor with Caribelle Batik and the new cruise ship port), local stores, and potentially schools and prisons. Containers should use distinctive decorations (i.e., Caribelle Batik ribbons) related to St. Kitts and Nevis to appeal to tourist as souvenirs. The authors noticed excellent examples of the suggested packaging in the airport gift shops in San Juan, P.R., on the return trip.

Summary

The assessment of the agro-industry in St. Kitts/Nevis was an interesting and rewarding effort. The opportunity to visit with individual and small groups of agro-processors, resort and grocery store personnel was beneficial and gratifying. The FAVA/CA is an excellent organization that coordinated well and there was good cooperation with agencies on the islands.

The basic problems were similar to a 1940 USA extension education requirement, but in the Internet age. Some individual agro-processors have obtained adequate information (visited the USA and operations related to their production, used online sources, sourced and ordered supplies, etc.) and developed proper techniques. Others are trying, but many do not have enough resources to obtain information nor for purchases of supplies including containers, container seals, and labels in quantities of economic scale. Food safety issues were clearly the most important area of interest.

Development of cooperatives to pool resources and knowledge was recommended. However, this may hamper

those that have developed products and markets through personal initiative. This presents a philosophical question of how to help those that need much help without hurting those that need little help. The competition on St. Kitts/Nevis may flood the available market. In order to compete on other regional islands, the products must be of an even higher overall quality. Currently, no markets appear likely with the USA and other regional countries.

For potential FAVA/CA volunteers, participation in technical assistance activities such as described, provides both personal and professional benefits. Travel to unique and pleasant destinations is interesting and provides a broadened appreci-

ation of the advances of the USA culture. Exposure to different cultures also expands how to approach problems. Confrontation with lower level technology provides a challenge of determining how to share knowledge and experience with another clientele group. Such activities have no conflict with Florida agriculture and make good use of the resources provided.

The brief evaluation trip accomplished the established objectives. When implemented, the recommendations provided will result in positive impacts and changes. There is good potential for additional interagency coordination and educational coordination in the future.