

Saint kitts and Nevis Report 2004

PREFACE

The Office of IICA in St. Kitts and Nevis is pleased to present its Annual Report for 2004, in compliance with the norms established by the Institution. This Report outlines the action carried out, and the results obtained, which supported the sustainable development of Agriculture, food security and the prosperity in the rural communities.

IICA's mission is to support the Member States in their pursuit of progress and prosperity in the hemisphere by modernizing the rural sector, promoting food security, and developing an agricultural sector that is competitive, technologically prepared, environmentally managed and socially equitable for the people of the Americans.

The accomplishments documented in this report would not have been possible without the indispensable support that the Office received from the Ministries of Agriculture, Trade, Health and Tourism as well as the various private sector collaborators on both St. Kitts and Nevis. In addition, important and successful partnerships were fostered with the Pan American Health Organization (PAHO), the Caribbean Agricultural Research and Development Institute (CARDI), the Food and Agricultural Organization (FAO), the Republic of China (ROC) Agricultural Technical Mission, the United States Department of Agriculture (USDA) and the local offices of the Organization of American States (OAS) and the United States Peace Corp. These partnerships have provided a synergistic effect and have "added value" to the results, which were obtained.

The visit of the Director General, Dr. Chelston Brathwaite, to the Federation was a landmark event, which has strengthened the bonds between the Institution and one of its Member States.

IICA looks forward to continuing its assistance in repositioning the agricultural sector of St. Kitts and Nevis.

Augustine Merchant
Coordinator,
IICA Office in St. Kitts and Nevis

1. EXECUTIVE SUMMARY

Introduction:

The sugar industry has played a critical multi-functional role within the context of the social and economic development of St. Kitts and Nevis. Despite this, the industry continues to be plagued by a myriad of problems, which has affected its viability and productivity. Prevailing global trends have dictated that an optimal strategy for the future of the industry needs to be developed with the utmost urgency. In his 2004 Budget Address, the Prime Minister, Dr. the Honourable Denzil Llewellyn Douglas stated, “the development of the non-sugar agricultural sector is a critical component of my Government’s overall economic diversification strategy” and that “considerable emphasis would be placed on identification of the constraints on the development of the sector and on the commitment of the necessary technical, administrative and financial resources to the removal or mitigation of these constraints.” It is in this context that the Annual Actions of the Institution were developed for 2004.

In an effort to facilitate the repositioning of Agriculture and the sustainable development of the rural spaces, the Institute achieved the following action oriented results.

Facilitating Competitiveness and Global Trade

The Institute has contributed to the increased understanding of global trade and its impact on local agriculture. In this regards, it collaborated with the Ministry of Agriculture, the Food and Agriculture Organization (FAO) and the East Caribbean Central Bank in hosting two national consultations. Ninety-five persons participated in the consultations. The office also supported a 3-day National Level training course on, “Introduction to Trade Negotiations and Policy Analysis.” This was conducted by the FAO/CARICOM Food Security Project. Sixteen (16) persons benefited from this training.

The Inter-Ministerial Committee on Trade Issues met on four occasions during the year and has been very active in providing updates on current trade issues to senior public sector officials.

The office continued to support agro-tourism linkages in the Federation. Technical Assistance was given towards the completion of the Fothergills Heritage Village. A

presentation on agri-tourism linkage was made at a workshop, which was organized by the Ministry of Tourism. The Institute also served on a committee, which organized an agri-tourism exposition during Tourism Week. These activities have contributed to increase sales of fresh and processed products to the hospitality industry.

Promoting Food Safety and Agricultural Health

Significant progress has been made in promoting Food Safety and Agricultural Health. This has enhanced St. Kitts and Nevis' ability to comply with the Sanitary and Phytosanitary (SPS) Agreement of the World Food Trade Organization (WTO). The European Union/Caribbean Forum (EU/CARIFORUM) sponsored project has been completed and this has assisted in upgrading the national institutional and technical capability to:

- Develop accreditation programmes for private animal health professionals to conduct regulatory functions under government supervision.
- Use software for the assessment and analysis of import risk
- Develop a harmonized registration procedure for agricultural pesticides.
- Develop accreditation programmes for private plant health professionals.

The office facilitated the participation of two officers to the SPS meeting in Geneva on three occasions. In addition, it has supported the meetings and other logistical arrangement for the functioning of the Agricultural Health and Food Safety Committee. The Pan American Health Organization (PAHO) has recently collaborated with the Committee to develop regulations for the Food Safety Legislations, which were submitted to the Attorney General's office.

Eighty-five participants from both the private and public sectors benefited from training in Good Agricultural Practices, exotic pests of economic importance, quarantine methodology, Pest Risk Analysis and Emergency Disease Response mechanism. In addition, the office has continued to provide support to the White Fly Project, which is being implemented by the Department of Agriculture.

Strengthening Rural Communities

During the reporting period, the targeted groups, such as the Youth Forum, Agro processors, Beekeepers and Farmers were strengthened through support, which facilitated skills development, entrepreneurship and project identification. Twenty three (23) women were trained in soap and lotion making and have been able to increase their income. Forty (40) youths were trained in plant propagation and candle making. Members of the various Associations were trained to develop business plans and manage farm resources. Three projects were submitted to funding agencies for possible funding.

Support was provided to initiate the formation of a local CABA group. This will be continued into the New Year. Efforts were also made to reinvigorate the Youth Forum, which was undergoing some level of attrition.

Hemispheric Integration

The Institute provided support to the Government of St. Kitts and Nevis on the Diversification of its sugar cane industry. Two (2) senior technicians involved in the Government's programme, visited Brazil and participated in an International Conference on Sugar and Alcohol. They also visited some important institutions involved in the production of alcohol from sugar cane.

The Federation also participated in a Regional Policy Workshop, "Developing Policies and Proposals for Alleviating Key Binding Constraints to Agriculture in the Caribbean." The aim of this workshop was to strengthen agriculture within the Caribbean region by developing more practical and results oriented implementation mechanisms that engender effective public and private sector partnerships and national and regional harmony.

The Institute continues to support the Federation's pursuit of the Agro-2003-2015 Plan of Action.

The Office was also able to strengthen its relationship with the University of Florida and the United States Department of Agriculture (USDA). These relationships were initiated through the Florida Association for Volunteer Action in the Caribbean Area and the Americas (FAVA/CA), which had provided technical assistance on IICA's behalf for the Fruit fly Project of the Ministry of Agriculture.

The OECS Secretariat and IICA continued to work on refining a "Common Agriculture Policy and Strategic Framework for the OECS." The Institute facilitated the participation of a technocrat to these important meetings.

The Young Americas Business Trust (YABT), a non-profit organization affiliated with the General Secretariat of the Organization of American States (OAS) acts as a catalyst to promote young entrepreneurship in Latin America and the Caribbean. It works through collaboration with public and private organizations in technology, education, leadership and national partnerships. IICA's Office provided technical and financial support towards its launching and the establishment of Business Labs in St. Kitts and Nevis.

The Office and IICA St. Vincent and the Grenadines assisted the Ministry of Agriculture, Nevis in sourcing and shipping 500 dwarf coconut plants which were procured in St. Vincent and the Grenadines.

The Office also provided an air ticket for an agricultural officer on Nevis to visit agro-processing facilities in Grenada. IICA Grenada facilitated this visit by making the necessary arrangement.

Developing Human Capital

The capacities of stakeholders were enhanced as a result of the training and educational opportunities which were provided by the Institute. These initiatives were pursued internationally, regionally and locally and were related to the various strategic areas. The Information Centre of the IICA office continues to be an important source of information for farmers, technicians and students. In addition, a number of stakeholders were able to improve their skills in information technology.

2. REVIEW OF THE AGRICULTURAL SECTOR OF ST.KITTS AND NEVIS¹

The Federation of St.Kitts and Nevis is made up of two islands, separated by a narrow strait, and is situated at the northern end of the Leeward Chain of the West Indies. The island of Nevis, lies about 3 kilometres (km) south-east of St. Kitts. It is the smaller of the two islands with a land area of 93.2 square kilometres (Sq km), while St. Kitts has a total land area of 168.4 Sq km. St.Kitts and Nevis is a small, open economy which produces a narrow range of goods and services, most of which are exported, and it relies heavily on imports to satisfy the demand for consumer and producer goods. The sugar industry was a major contribution to economic activity, with sugar being exported to Europe-mainly the United Kingdom (UK) - under preferential arrangements, and the United States of America (USA) under a separate access arrangement. However, over the years some diversification has occurred, with tourism and related services, and to a lesser extent light, non-sugar manufacturing, developing as important areas of economic activity.

The sugar industry in St.Kitts is at a crossroad. Production has been declining in recent years and has reached such a low level of output that the financial outcomes continue to be negative at relatively high costs. The 2004 sugarcane harvest produced 14,384 metric tons of sugar which was the lowest ever since the mid 1930's. From an area of 2,840 hectares, a total of 171,915 tons of cane were reaped. The mean yield was calculated at 60.53 ton canes/hectare and 5.06 tons sugar/ hectare. In addition, the average number of tons cane which was required to produce a ton of sugar was 11.95. This was regarded as being unsatisfactory by the standards established at the Corporation.

In 2004, the industry exported only 13,540 metric tons of sugar that was shipped as protocol sugar to satisfy the European Union (EU) quota. Once again, the industry was not in a position to supply the quota to the United States because of low sugar output.

Despite its declining contribution to GDP, the sugar industry contributes US \$10.3 million to foreign exchange earnings and makes a considerable contribution to the socio-economic welfare of the Federation. During the reporting period, the total number of persons employed in the industry as a percentage of the active working population stood at 8.16%. The revenue derived from sugar as a percentage of Gross Domestic product was 1.2%, whereas the revenue from sugar as a percentage of total agriculture production was 34.97%.

¹ Extracted from the Department of Agriculture and St. Kitts Sugar Manufacturing Corporation's Annual Reports

The government of St.Kitts and Nevis has stated that as part of its development policy, the non sugar agricultural sector is a critical component of its economic diversification strategy. During the year 2004, small increases in production were recorded for cabbage, sweet pepper, white potato and peanut, while marginal decreases were reported for carrot, tomato, watermelon and yam when compared with the previous year. The production of pineapple increased by 50% from 10,000 to 15,000 Kg between 2003 to 2004 but remained relatively low when compared to the domestic demand. However, a return to significant levels of pineapple production is being observed. Production levels continued to be relatively good for cabbage, carrot, sweet pepper, tomato and watermelon thereby meeting the domestic demand for four or five months of the year.

In 2004, beef production increased from 83,200 kg in 2003 to 121,700 kg. This represented an increase of 46%. This was the fourth annual increase since the introduction of the beef marketing Initiative in September 2001 and the production of boneless beef. Presently, 90% of the production of boneless beef, ground beef and beef burgers have been met through local production.

Sheep and goat meat production continued to be low despite a strong market demand. Mutton declined by 19% during the reporting period whereas there was a slight increase of 7% for goat meat. A major constraint to small ruminant production continues to be the very high incident of dog attacks.

Pork production was stable during 2004 but a decrease in the production of poultry, eggs was observed.

The major challenges for technical cooperation in the agricultural and rural sectors of St. Kitts and Nevis are:

1. The negative effects of trade liberalization on agricultural production including agro-processing
2. Competition for resources of land, water, labour and capital investment from tourism and real estate development
3. Disunity among farmers
4. Lack of adequate technology and infrastructural development.

3. SUMMARY OF THE NATIONAL AGENDA

In 2001, the IICA Office in St. Kitts and Nevis started the consultative process towards the development of a National Agenda. The aim of this process was to encourage dialogue with the objective of promoting medium and long-term national strategies toward sustainable improvement in agriculture and rural life. The National Consultation involved three processes. The first was to obtain via a questionnaire the opinions of leaders of the agricultural and rural community. The critical issues were then analysed and then discussed with the leaders in order to reach agreement on strategic issues that should be addressed.

The persons who participated in the process were categorised as officials of the public sector, leaders of Producers Associations and civil society organizations with broad experience in, and thorough knowledge of agriculture and rural life.

In light of the dynamic and continuous nature of the consultative process, further formal interviews were conducted with representatives of key stakeholders to identify specific area, where IICA could focus its attention during the period 2002-2006. In addition, informed discussions were conducted with individuals to ascertain perception and interpretation of IICA's work and to determine areas of possible assistance.

The process of developing the National Agenda also consisted of a review of documentation outlining focus. Two (2) of the important documents which guided the articulation of the Agenda were:

- i) Department of Agriculture: Strategic Plan 2002-2005
- ii) St. Kitts and Nevis: Medium Term Strategy 2000-2002

The Mission of the Institute's office in St. Kitts and Nevis is to cooperate with the Government, Private Sector, National, Regional and International Institutions in order to improve competitiveness and promote the sustainable development of agriculture.

The National Agenda seeks to specifically:

- Facilitate competitiveness and global trade
- Strengthen rural communities
- Promote food safety and agricultural health
- Develop human capital
- Support integration and horizontal cooperation

- Promote strategic partnership

These results would be achieved by means of the Institute's Strategic areas of technical cooperation, namely:

- i) Trade and Agribusiness Development
- ii) Agricultural Health and Food Safety
- iii) Sustainable Rural Development
- iv) Technology and Innovation; and the following supporting areas:
- v) Education and Training
- vi) Information and Communication

i) TRADE AND AGRIBUSINESS

- Co-host inter-agency forum on trade policy issues in collaboration with Ministries of Agriculture and Trade and the Development Bank.
- Co-sponsor and collaborate with government ministries, farm organizations and private organizations to organize seminars/training courses on international and regional trading agreements.
- Completion of Situation and Outlook Report for Agriculture
- Collaborate with the Ministry of Agriculture to compile statistical digest.
- Establishment of National Alliance for Sustainable Development.
- Diffuse information through IICA's publications

ii) AGRICULTURAL HEALTH AND FOOD SAFETY

- To collaborate with the Ministry of Agriculture and the United States, Animal and Plant Health Information Service (APHIS) in conducting two advanced Quarantine Workshops.
- Conduct review of Quarantine service.
- Collaborate with the Ministry of Agriculture CARDI and APHIS in conducting a bio-control programme for white fly.
- Promote the establishment of a Food Safety Committee.
- In collaboration with the other Eastern Caribbean Countries Good Agricultural Practices (GAP) will be institutionalized. The activities to be carried out to achieve this will be:
 - Preparation of GAP Manual, disseminate and train participant
 - Preparation Guidance Document on minimum standards
 - National Consultations on Guidance Document
 - Preparation of protocols for determining organic and pesticide residue on fresh vegetables
 - Preparation of due diligence manual

- Training of technicians in due diligence auditing
- Purchasing of equipment and materials for two laboratories.

iii) SUSTAINABLE RURAL DEVELOPMENT

- To develop an Agro-tourism development plan
- To develop a landscape design for a historical site
- Conduct six (6) workshops with three farmer groups in capacity building, leadership and development skills
- Foster the use of information technology for accessing information and also to link with similar types of organization.
- Conduct three (3) agro-processing workshops.
- Assist in establishing a second community computer laboratory.
- Host Risk Management Workshop in collaboration with the Eastern Caribbean Institute of Banking.

iv) TECHNOLOGY AND INNOVATION

- Procurement of Germplasm material to support the Federation's Tropical Fruit Industry Expansion Programme.
- Develop project proposals to procure peanuts and onion drying facilities.
- Assist Ministry of Agriculture in developing project proposal to improve irrigation facilities.
- To encourage the participation of local farmers and technicians in some training programs that are being done by other member states.
- To co-host with the Ministry of Agriculture and the St. Kitts Sugar Manufacturing Corporation (SSMC) training courses in soil and water conservation.

v) EDUCATION AND TRAINING

- Establishment of Documentation and Information Centre
- Establishment of Distance Learning Centre
- Conducting workshops and providing documents on topics related to strategic areas.

vi) INFORMATION AND COMMUNICATION

- Dissemination of publications, such as Tropical Fruit Newsletter, CARAPHIN News, In a Nutshell, AgriView, Access and IICA News.

- Promotion and dissemination of project outputs and agricultural related information

4. RESULTS

4.1 Introduction

The IICA office continued to implement its National Technical Agenda through the provision of technical and developmental assistance in the six (6) strategic areas of focus viz. Agricultural Health and Food Safety; Trade and Agribusiness Development; Sustainable Rural Development; Technology and information; Education and Training and Information and Communication. The achievements/results are reported on in keeping with the Institute's mandate from the hemispheric Heads of Government and the Bravaro Declaration.

4.2 Facilitating Competitiveness and Global Trade Symposiums

On January 21st 2004, the Institute in collaboration with the Inter-Agency Forum on Trade Issues, organized a symposium on Nevis. The presenters were drawn from the Ministry of Trade and the Eastern Caribbean Central Bank. The theme for this activity was "The Impact of Trade Liberalization on local Agricultural Development". The presentations given were:

- (i) Overview of WTO, FTAA and CSME as they relate to agricultural trade and development.
- (ii) Impact of trade liberalization on the agricultural sector.
- (iii) Impact of food security on local and international trade.
- (iv) Impact on GAPs on local and international trade.
- (v) Trade liberalization and the Agricultural Industry; some macro-economic issues.

Approximately seventy (70) persons comprising students, public and private sector personnel participated in this activity, which was very interactive.

On the 12th October, the Department of Agriculture, St. Kitts in collaboration with the Institute hosted its 2nd Annual Agricultural Symposium. This activity formed part of the programme to commemorate World Food Day. The main presentation, "Trade and Food Security: Impact on Agricultural Development," was given by the Trade Specialist for the FAO/CARICOM/CARIFORU Food Security Project, Mr. Gregg Rawlins. The major focus of his presentation included:

- i) Definition and elements of Food Security
- ii) Key elements of a strategy and policy for safe guarding Food Security and Agricultural Development.
- iii) The role of Domestic Production in ensuring Food Security.

The targeted groups for this session were crop and livestock farmers, importers/exporters, agro-processors customs and supermarkets/retail outlets. Forty persons attended this activity.

The office also supported a 3 day national level training course on, "Introduction to Trade Negotiations and Policy Analysis." This was conducted by the FAO/CARICOM Food Security Project. Sixteen (16) persons benefited from this training.

Some of the topics discussed were:

- (i) The WTO Agreement on Agriculture negotiation for further reform
- (ii) Trade Agreements and Negotiations with implications for agriculture. The Free Trade Area of the Americas (FTAA), the CARICOM Single Market and economy and the CARICOM bilateral Trade Agreements, African, Caribbean and Pacific Group of States (ACP Group) – European Union (EU) Trade Relations
- (iii) The Economic Trade Impact of Domestic Policies in small countries.

The Inter-Ministerial Committee on Trade Issues is comprised of senior and public sector officials and provides a forum whereby government officials could be updated on current trade issues. This committee met on four occasions during the year and was used by the two nationals who attended the SPS Agreement Meeting in Geneva, to sensitize other members and stakeholders on the relevance of these meetings to the sustainable development of the sector. In addition, the Ministry of Trade officials who attended overseas meetings have also used the meeting to inform members on current status of the negotiation process.

The aforementioned symposiums and training workshops have enhanced the public and private sector stakeholders' awareness of the impact, which the multinational trading system could have on the development of agriculture and the rural sector. Participants are also cognizant of the need to understand the negotiation process, adjusting policies and mode of operandi, in order to be competitive.

The Office continued to support agro-tourism linkages in the Federation. Technical assistance was given towards the completion of the first phase of the Fothergills Heritage Village. The site has enhanced the product development thrust of the Ministry of Tourism

and is now an important attraction for visitors. Agro based products are sold as gifts at this location.

In an effort to sensitize young persons regarding the important economic linkages between agriculture and tourism, the Ministry of Tourism, Nevis, held a Workshop for twenty (20) school leavers. The office made a presentation at this workshop and was able to utilise audiovisual aid which was received from the office in Barbados to complement the presentation. The Institute also served on a committee, which organised an agro-tourism exposition during Tourism Week. This committee was comprised of representatives from the beekeepers, agro-processors farmers and other producers. The activity contributed significantly to increase sales of fresh and processed products to the hospitality industry.

4.3 Promoting Food Safety to Agricultural Health Strengthening Agricultural Quarantine Services

The European Union funded sub-programme, “Strengthening Agricultural Quarantine Services” was completed during the first quarter of 2004. The main objective of this sub-programme was to upgrade the national agricultural health services of the Caribbean, thereby enhancing individual countries ability to comply with the Sanitary and Phytosanitary (SPS) Agreement of the World Trade Organisation (WTO) and the Free Trade Area of the Americas (FTAA). The Federation of St.Kitts and Nevis was assisted to:

- **Develop accreditation programmes for private plants and animals health professionals to conduct regulatory functions under government supervision.**

“... To comply with the WTO/SPS Agreement, St.Kitts and Nevis will have to increase the level of human resources needed to provide service that is both credible and professional. Financial resources which are necessary to achieve this are limited and this is not a practical option. Therefore, accreditation of private animal and plant health professionals to conduct regulatory work can be a feasible way of delivering high quality services.”

- **Use software for the assessment and analysis of import risk.**

“... One of the Commitments of St.Kitts and Nevis is to provide accurate and reliable information regarding issues of agricultural importance to trading partners on a continuous basis. Specific information regarding pest occurrences and distribution coupled with the measures taken to protect the local agricultural sector from the ravages of exotic pest and diseases is exceptionally important. Due to the unavailability of financial resources and adequate trained staff, the Federation is limited in its ability to provide such information to

trading partners. The project was able to train four (4) nationals in the use of software for import risk analysis for both plants and animal.”

- **Develop a harmonised registration procedure for agricultural pesticide**

“...The inclusion of a system to register and monitor the use of pesticides using a harmonised regulatory mechanism will facilitate international trade in agricultural products and result in increased confidence in the safety of agricultural exports.

Internationally, a number of trading organisations are insisting on the development of regulatory systems that will ensure that pesticide use is within the guidelines demanded by their customers. This need to meet the demands of export markets and to comply with the WTO/SPS Agreement has been a driving force to establish harmonised registration procedures for agricultural pesticides.”

The Institution has also contributed to a better understanding of the SPS Agreement by assisting two technicians from the Federation to participate in three meetings, which were held in Geneva under the auspices of the WTO. On the return of the participants, seminars were organised to sensitise other stakeholders on the relevance of these meetings to the sustainable development of the sector.

One technician from the Federation participated in a Regional GIS/GPS workshop for Pest and Disease Monitoring and Detection. The workshop, which was sponsored by the Institute and the United States Department of Agricultural Service (USDA/FAS) sought to provide participants with a basic understanding of GIS and its application to agriculture. The workshop content included:

- Exposure to the concepts and practice of GIS, including maps, data entry, analysis and presentation.
- An introduction of Global Positioning Systems (GPS) and teaching of its use in the programme.
- Arc view 3x software was the main focus.
- A web-based programme developed at Pennsylvania State University was also introduced and participants were exposed to its use in regional pest monitoring programmes.

The Institute also provided assistance to the Ministry’s Management Programmes for fruit fly and the Red Fire Ants.

4.4 Strengthening Rural Communities

In 2004, IICA continued its programme of technical assistance to expand production among the community groups and was met with some notable successes.

The members of the Nevis Agro-processing Cooperative have increased their production and are now marketing their products in the more lucrative segment of the tourism market. This is mainly due to the assistance which was given by IICA to enhance the quality and appearance of the products. In addition, the Institute has been collaborating with the Department of Agriculture, Nevis, to assist the group in establishing a community processing unit, so as to increase the scale of their operations. Discussions have been ongoing with international and regional funding agencies, and two project proposals have been submitted to assist with the construction of a building and the procurement of equipment.

The office has also assisted with the growth and development of the St. Kitts Beekeepers Cooperative. During 2004, the Cooperative successfully completed implementation of a EC\$30,000 project which was developed by IICA and funded by the Canadian Fund for Local Initiative. The project enabled the members to procure additional hives primarily. This has resulted in an increase in income for members. In an effort to 'add value' and utilize the wax, which is a by-product of the honey, the Institute was able to obtain technical assistance from the Florida Association of Voluntary Action in the Caribbean and the Americas (FAVA/CA) to conduct training in the manufacturing of candles, soap, polish from beeswax. Twenty persons participate in this workshop. So far, three of the participants have developed business enterprises and have increased their income as a result of the training received.

The Institute is cognisant of the need to develop skills and a love for agriculture at a young age. Consequently, it facilitated training in plant propagation and candle making for 40 students from 3 rural high schools. This training programme which is done normally during the Easter Vacation has been ongoing for the past three years. It has contributed significantly to the student's School base Assessment, which is used as an internal evaluation for overseas examinations. In addition, it has opened up avenues for some participants to pursue careers in agriculture.

During the reporting period, the Office continued to assist and strengthen its collaboration with Project Strong. Project Strong is a Youth Initiative which deals with teenagers who ended their high school careers as under achievers. Generally, their poor high school records handicaps them and they become young people at risk. Unable to find satisfactory jobs, they are prone to drift into premature parenthood, drug use and crime.

Project Strong offers a programme which is designed to focus on:

- The development of positive attitudes
- The raising of self-esteem
- The development of marketable skills

- The preparation for satisfying job.

The Institute provided training in plant propagation and agro-processing. The students were able to showcase their products at a tourism exposition and at the Department of Agriculture Annual Open Day. It is hoped that the skills, which they learnt would assist them in becoming more marketable.

4.5 Hemispheric Integration

In light of the declining fortunes of the sugar industry, the government of St. Kitts and Nevis has been exploring alternative uses for sugar cane other than the production of sugar. Two of the options which are being explored are the generation of electricity and the production of ethanol.

Brazilian sugar producers are among the world leaders in the diversification of their industry, especially in the production of ethanol.

The Institute financed the visit to Brazil of two (2) senior technicians involved in the Government's diversification programme to participate in the International Conference on Sugar and Alcohol. Arrangement was also made for them to visit some important establishments that are involved in the production of alcohol and electricity generation from sugarcane. *(See Appendix I for Report)*

At the CARICOM Heads of Government 2004 Summit, which was held in Grenada, a working document was presented by President Jagdeo who has special portfolio responsibility among community leaders for agriculture. CARICOM on the basis of that document, is now considering the repositioning of the region's agriculture to rest primarily on two "clear and mutually reinforcing pillars – the global competitiveness of agri products and balanced development of rural areas and communities." Consequently, all member countries were requested to convene National Consultations with stakeholders to identify a few key binding constraints to agriculture. St. Kitts and Nevis held its consultation and was supported by the Institute in this regard. The Federation's participation in a Regional Policy Workshop, "Developing policies and proposals for Alleviating Key Binding Constraints to Agriculture" was also supported by IICA. This workshop was held in Trinidad and the aim was to strengthen agriculture within the Caribbean region by developing more practical and results oriented mechanisms that engender effective public and private partnerships and national and regional harmony.

The Declaration and Plan of Action of the Third Summit of the Americas recognized agriculture and rural life as a strategic issue in the Inter-American Summits process.

In the Declaration of Nuevo Leon, issued at the Special Summit of the Americas in Mexico in 2004, the Heads of States and Government, committed themselves to maintaining a sustained effort to improve living condition for the inhabitants of rural areas by promoting investment and creating a favourable environment to achieve sustainable improvements in agriculture.

The Government of St. Kitts and Nevis has the primary responsibility for implementing the mandate on agriculture and rural life and reports on progress in implementing the Agro 2003-2015 Plan to the Summit Implementation and Review Group (SIRG). The Institute continues to support the Federation implementation of this Plan.

During 2003, significant technical assistance was received from the United States Department of Agriculture (USDA) and the University of Florida through the Florida Association of Voluntary Action in the Caribbean and the Americas (FAVA/CA). This assistance was in the area of biological control of the fruit fly on St. Kitts and Nevis. Further assistance was provided in 2004, but on a much lower scale.

The Young Americas Business Trust (YABT), a non-profit organization affiliated with the General Secretariat of the Organization of American States (OAS) acts as a catalyst to promote young entrepreneurship in Latin America and the Caribbean. It works through collaboration with public and private organizations in technology, education, leadership and national partnerships. A Peace Corp Volunteer has been assigned to the Project to assist in introducing this concept to the Communities as well as the High Schools throughout the Federation. The IICA Office provided technical and financial support towards its launching and the establishment of Business Laboratory in St. Kitts and Nevis.

The Ministry of Agriculture on Nevis will shortly be embarking on a reforestation programme. Consequently, a request was made to our office to assist in sourcing and shipping 500 dwarf coconut plants. Through networking with IICA, St. Vincent and the Grenadines, arrangement was made and the request was fulfilled expeditiously.

The Office also collaborated with IICA Grenada and facilitated the visit of a senior government official from Nevis to Grenada to look at agro-processing facilities in that country. IICA St. Kitts and Nevis provided an air ticket whereas IICA Grenada made all the logistical arrangement.

4.6 Developing Human Capital

The development of the human capital is an essential component of the Institute's philosophy and throughout 2004, emphasis was placed on the training of professionals and entrepreneur within the sector. These training activities span the entire spectrum of the various strategic areas and were pursued both locally as well as overseas.

A number of groups and individuals were able to utilize the computers in the Distance Learning Centre to learn various skills. In addition, the Centre was also available for person who wanted to search for new information.

One of the initiatives which was pursued and which contributed to the development of the human resource base of the agricultural sector was the Caribbean Regional Intern Scholarship Programme (CRISP). This project was funded by the United States Agency for International Development (USAID) and had as its overall goal: *“to equip farmers and other stakeholders involved in agri-enterprises with the necessary information, skills and tools to develop and manage their businesses more profitably.”*

In St. Kitts and Nevis, the training was completed over four days and 69 persons benefited. The categories of persons who participated were youths, farmers, agro-processors, beekeepers, horticulturist and fishermen. The training focused on the following specific areas:

- Entrepreneurship and Small Business Management
- Business Finance
- Internet use, Computer Applications and use in Business
- Marketing and Trade related issues
- Food and Environmental Safety; and
- Group Dynamics and Leadership

Each participant in the programme received a copy of the training manual which was compiled by local facilitators/trainers. The manuals included the complete course material and specific daily exercises to be completed at home. The trainers included both national facilitators and IICA's professional staff.

The delivery approach was set out in the training manuals and included interactive lecture/discussions, addressing definitions, concepts and theory of business management. Illustrations were provided with reinforcement exercises for each module. Group breakout sessions were mainly used for practical exercises.

5. INTER-AGENCY COOPERATION

During 2004, IICA's relationship with clients, national, regional and international agencies were strengthened and 'value was added' to the technical cooperation programme.

The following National, Regional and International organizations were actively involved in joint actions during the reporting period.

National:

- Ministry of Agriculture, Land, Housing, Fisheries and Cooperatives
- Ministry of Tourism
- St. Kitts Beekeepers' Cooperative
- Nevis Farmers' Association
- Small Enterprise Development Unit (SEDU)
- Agro-processing Association
- Project Strong

Regional

- Caribbean Agricultural Research Development Institute (CARDI)

International

- Food and Agriculture Organisation (FAO)
- Pan American Health Organisation (PAHO)
- Republic of China Technical Mission
- Florida Association of Voluntary Agencies for the Caribbean Action (FAVA/CA)
- Organization of American States (OAS)
- United States Peace Corps

6. FUTURE OPPORTUNITIES FOR COOPERATION

In light of the fact that the government has made a pronouncement that as from 2005 it would discontinue production of sugar for export, several opportunities exist for the Institute to assist with the diversification of the sector. The Institute could provide some leadership to the transitional process and assist with the retooling/retraining of those persons who would become retrenched as a result of the fall-out from the industry.

Some of the areas which technical cooperation could be intensified include agro-processing, beekeeping, flori-culture and information technology. Other opportunities lie, in providing strategic analytical and technical support to:

- Achieve competitiveness in global trade
- Strengthen rural communities
- Promote food safety and agricultural health
- Develop human capital; and
- Collaborate with other Member States

APPENDIX 1

MINISTRY OF HOUSING, AGRICULTURE, FISHERIES AND CONSUMER AFFAIRS

REPORT OF VISIT TO BRAZIL

1. Background

In the face of what appears to be an irreversible decline in the price of bulk sugar, the Government of St Kitts-Nevis and SSMC have been exploring alternative uses for sugar cane other than the production of sugar. Chief among the options being considered are the production of ethanol and electricity generation.

Brazilian sugar producers are among the world leaders in the diversification of their Industry, especially in the production of ethanol. In view of their long experience and expertise in the production of marketable non sugar products from sugar cane, a visit was arranged by the Inter American Institute for Cooperation in Agriculture (IICA) for an expert in the field of ethanol production, from Brazil, to visit St Kitts with a view to assessing the technical and financial viability of producing ethanol in St Kitts.

Unfortunately he was unable to make the trip at the appointed time because of a threatening hurricane in the area. However, in view of the importance of the issue, IICA arranged for two (2) persons from St Kitts to visit Brazil, with a view to gathering information that would shed some light on the feasibility of the alternative options. The two (2) representatives from St Kitts were Oswald Martin, SSMC and Keith Phillip, Ministry of Agriculture.

2. Objectives

The following objectives were the focus of the trip.

- To understand the technical issues surrounding the production of ethanol and electricity from sugar cane.
- To assess whether the size of the industry in St Kitts would allow viable alternatives to develop on this basis.
- To ascertain the financial and human resources required to make this transformation.
- To understand the market for these products.
- To develop contacts with experts in this field

3. **Itinerary**

Day 1 (all day)

Attend 4th Datagro International Conference on Sugar and Alcohol

Day 2 (Morning)

Visit to Jardest S/A Sugar and Ethanol

Homepage: www.Jardest.com.br

Contact: *Aloisio Almeida Prado, Director*

Located in Jardinopolis, 20 km from Ribeirao Preto, Jardest S/A Sugar and Alcohol was founded in 1979 by rural producers from the cities of Jardinopolis and Sales Oliveira. Resources for its installation were obtained from the National Alcohol Programme.

The first crop was harvested in 1982, when the Factory ground approximately 225,000 tonnes of sugar cane, producing 13,276 m³ of alcohol. In 1995, a sugar factory was installed at the unit.

During the 2004/2005 crop, Jardest estimates that it will reap 1,200,000 tonnes sugar cane, yielding 107,000 tonnes of sugar.

Day 2 (Afternoon)

Visit to Cia Acucareira Vale Do Rosario

Homepage: www.valedorosario.com.br

President: Eduardo Diniz Junqueira

Contact: Maria Helena Santos Prado, Directorate Secretary

Founded in 1964 by a group of producers in the region who wanted to replace coffee production, Cia Acucareira Vale do Rosaio is one of the larger production units for sugar, alcohol and energy in Brasil. The Factory is located in Morro Agudo, 65 km from Ribeirao Preto.

At the time of its establishment, it was intended exclusively to industrialise the production of sugar cane from suppliers without changing the fundamental nature of the region.

The area planted with sugar cane, 80,000 hectares, is administered by the sister company Nova Alianca Agricola e Comercial Ltd.

Day 2 (Morning)

Visit to Usina Santa Adelia S/A (Factory)

Administrative Director: Norberto Bellodi

Contact: Rosely Furian, Directorate Secretary

Homepage: www.udinsdsnyssfrlis.com.br

Located in the city of Jaboticabal, 75 km from Ribeirao Preto, Santa Adelia Factory employs 2,500 workers.

In its 2003/2004 harvest, the Factory ground approximately 2,079,000 tons, producing 103,000 m³ of alcohol, 153,000 tonnes of sugar, 1,910 tonnes of yeast and 78,800 MWh of energy. Manual harvesting is used in 75% of the acreage.

In 2002, the Factory began to generate electrical energy for sale to the local grid.

4. Observations

Jardest S/A Sugar and Ethanol

The salient observations are:

- They produce annually 46m litres of alcohol (32m anhydrous and 14m hydrous), 83,000 tonnes of VHP (very high pol) sugar for export (99% Pol) and 90,000 tonnes sugar for internal use. . (1 tonne of alcohol = 90 litres of alcohol)
- This factory grinds 1.25m tonnes of sugar cane annually (c.f. SSMC ~ 0.20m tonnes). 500,000 tonnes come from fields owned by the Company, 600,000 MT are supplied from fields of the company shareholders, and 150,000 MT comes from other suppliers.
- The factory grinds 6,000 MT per day or 200 MT per hour. 70% of the juice is channeled into sugar production and the remainder, together with the molasses

by-product of sugar production, is used to produce alcohol. Some of the bagasse is subjected to heat treatment as a preparation for cattle feed and the excess is sold to a local rice company who produce soya bean oil and oranges. The filter press mud is mixed with the unwanted byproducts of alcohol production and is sprayed back into the fields. All parts of the cane are productively utilised.

- The factory was built under a Government pro alcohol initiative (The National Alcohol Programme, launched in 1975) whereby the Government contributed 80% of capital to match 20% from private investors to fast track the development of alcohol and alcohol related industries, as a means of reducing Brazil's dependency on imported oil. The factory was initially designed to produce alcohol but began to produce sugar in 1996. They have storage capacity for 70m tones of alcohol.
- 16,000 hectares are used to grow cane to supply this factory. The crushing period is from May to November and the mill employs 350 workers. The larger cane suppliers manage their own harvesting but harvesting for smaller suppliers is carried out by the factory. 80% of harvesting is manual and 20% mechanical. Mechanical harvesting is less expensive but employment is a priority. The variety of cane is very long and typical manual harvesting productivity is 10 tonnes per man per day. Mechanical harvesters work twenty four (24) hours per day, and use tracks where fields have any significant slopes. In addition where fields are sloping they are prepared with banks to retain water. This is possible because of the clay soils. Most of the cane is burnt for harvesting but government legislation is gradually eliminating the burning of cane for environmental reasons. Mechanically harvested cane is allowed three (3) ratoons whereas hand cut canes is allowed five (5) to six (6).
- Recovery is 90% but 98% could be achieved if expensive diffuser technology were employed.
- A council of mill owners consisting of eight (8) persons from industry and eight (8) from the suppliers set the price based on recommendations from a university department specializing in sugar industry economics. An adjustment is made at the end of the season to allow for any changes to the original assumptions that may have taken place. Payment for cane supply is made in installments throughout the year. Cane is paid for on the basis of quantity and quality. Core sampling is used to assess quality.
- The marketing and distribution of the produce is managed by a cooperative (Crystalserv) owned by eight (8) mills in the area

Cia Acucareira Vale Do Rosario

- This mill is one (1) of the five (5) biggest sugar mills in the world. It grinds 5M MT per year and employs 3,000 direct employees. Cane is transported to the factory in linked trucks (2 to 3) each of which could hold 18 tonnes. The

total acreage supporting the mill is 85,000 hectares and 90% of the land harvested belongs to the mill. 57% of the cane is harvested mechanically and 43% manually.

- The mill train consists of two (2) trains, six (6) mills each plus a diffuser. They grind 1,000 tons per hour. The diffuser handles 10,000 tons per day while the two (2) other mills handles a total of 16,000 tons per day.
- Diffuser technology is used to achieve a recovery of 99%.
- All Bagasse is used to produce energy. The high-pressure boiler is rated at a pressure of 44 kilograms per square cm and drives two (2) 25 MW generator sets. The factory utilizes 10 MW and can sell up to 58 mega watts to the local grid. This is enough to light a city of half a million inhabitants. Plans are being developed to increase this to 88 MW in the future.
- They are able to sell carbon credits because of their highly environmentally friendly and efficient designs.
- They also produce food for animals (fish, cattle, pigs and horses).
- They invest heavily in their human resources and have a thriving educational program for employees.

Usina Santa Adelia

- The mill is 57 years old but was increased in size in 1997 because of the Pro Alcohol programme. They grind 2m tones per year, which makes it a medium size mill for Brazil. The juice is used approximately 50:50 for alcohol and sugar production. The mix can vary however depending on the state of the relative markets.
- They grind 12,000 tonnes per day using a 6 mill train with sizes of 37” x 78” and a shredder of Brazilian design. All mills are pressure fed using Donnelly chutes. The factory employs 70 persons per shift.
- 160,000 tonnes of alcohol are produced, 90,000 tonnes of which is anhydrous. 80,000 MWh is sold to the local grid every year at a cost of US\$35 per MWh. Two high-pressure boilers rated at 63kg/sq cm are used to generate the electricity requirements.
- The mill owns 60% of the acreage supplying the cane but harvests all the cane that it grinds. 25% of the cane is mechanically harvested. The season is from May to November. The mills and the pans are computer controlled and the environment is extremely clean and orderly.

- Only white sugar is produced, using surfeitation. Extraction is 97%. They do not use a diffuser as the mills produce a better quality white sugar.
- The main products (sugar and ethanol) are sold through a cooperative in Sao Paulo. By-products are sold to other industries e.g. petrol, power, livestock, and non-sugar agriculture. The future market for ethanol is considered to be internal, as most countries will meet their own alcohol because of the relatively simple and widespread technologies involved.
- They produce at a cost of R500 per tonne white sugar. (1R= US\$0.66)

Dedini – boiler and mill manufacturer

- They have been in the sugar cane business for 80 years and specialise in boiler production. They produce steam boilers, mills, distillation and packaging equipment. They do not produce power generation equipment or turbines.
- Other local companies TGM, ABB and Toshiba manufacture turbines and generators.
- When shipping to the Caribbean they would transship at Venezuela, Jamaica or Miami.

Calderma – boiler manufacturer

- They have manufactured boilers for 32 years. They are a local company and use their own technologies. They specialize in high capacity boilers.
- They use to make 21 bar boilers, moved to 42 bar and now make 63 bar models.

5. Conclusions

Based on the objectives identified above, the following conclusions can be drawn.

- There was insufficient availability of time, data and relevant personnel to allow an in depth discussion of the economic aspects of industrial ethanol production and co-generation of electricity.
- The production of ethanol is a relatively simple process. There are no complex issues surrounding the development of this technology locally, nor are the financial requirements prohibitive. The technology has already been tried in St Kitts.

- The production of electricity as a by-product of sugar production is also a technology with which there is familiarity locally. The technology is more advanced than currently used but it is essentially the same. Power generation however, would require improvements in the preparation and grinding of cane to produce bagasse for burning in what would have to be a new and expensive high-pressure boiler and turbo generating sets. While we already produce electricity for the needs of the compound, using the current technology, there is likely to be the need for increased training in mechanical and electrical engineering to produce electricity efficiently.
- Brazil's market for ethanol is largely internal and is underpinned by legislation imposing a minimum ethanol requirement in gasoline used for transport vehicles. The view of industry managers in Brazil if that were ethanol legislation to be enacted in the major developed countries such as the United States of America and the United Kingdom similar in nature to that in Brazil, most of the production would come from internal sources because of the relatively simple technology involved and also the variety of sources of materials that could be used to generate the product. There is a view however, at this point in time, that environmental considerations could well trigger a massive increase in the demand for ethanol in the future, not only in developed countries but also in St Kitts-Nevis and neighbouring islands. The long term is not of immediate concern in determining the future in St Kitts and the short term indicates that a well developed market does not exist.
- Brazilian producers have access to large areas of land for sugar production. Most of the factories that we visited were being supplied with cane from areas many times the size of St Kitts. The economies of scale that this scale of operation permits can make their high capital investment in the latest technologies affordable. Ethanol production in St Kitts is unlikely to be competitive on the world market for precisely the same reasons that our sugar is not competitive. The scale of production does not allow the capital costs to be spread over a large enough volume to deliver a competitive price. Furthermore, the major part of the cost of the finished products will still continue to be incurred in field operations (planting, harvesting and transport) and unless solutions can be found to high costs in these areas then these cost inefficiencies will be reflected in an uncompetitive price.
- The co location of other related industries of a viable size improves the economics of the operations. As presently organized these industries are absent or underdeveloped in St Kitts and are not in a position to help to underpin the financial viability of the main industry.
- There are enough manufacturers within Brazil and also in other traditional supplier countries but technology is expensive and is tending to become larger and more complex. In Brazil the plants are tending to become larger. Consequently the capital investment costs are greater and therefore volume of output has to increase to defray these costs. Given the limitations of land, quota and other technologies to avoid the vagaries of the weather, there is no great scope in St Kitts to increase output volumes. While it is possible to

produce ethanol and generate electricity it is unlikely that we have the scope to do so profitably.

- The futures market for ethanol is in an embryonic stage of development, intercontinental trade in this product is expected to grow as more countries adopt clean fuel policies. The major producers of this product who are supported by government and academia are of the view that while international demand may increase the markets will essentially be serviced by local suppliers because of the ease with which it can be produced. The production of ethanol for export would have to be studied carefully, furthermore local demand could only be created by significant legislative changes.
- There is an obvious market for the electrical power but the competition will be with the price of diesel. If the Government decides that a proportion of the energy needs should be provided from local and renewable sources for national security reasons then the competition will be from other technologies such as wind and geothermal sources.
- The Brazilian Industry is well established, extremely efficient, well supported by Government, other industries and academia. They have the capability to provide equipment and personnel to deliver such projects. The only issue would be the cost and the feasibility.

6. Recommendations

- Experts in the respective fields should be invited to carry out pre feasibility studies of ethanol production and electricity generation from fuel cane with a view to using simple indicators to determine the possibility of achieving financial viability given our constraints.
- Government should develop policies on clean fuel use for automobiles (ethanol as an additive to gasoline) and the generation of energy from renewable sources to guide this discussion. These policies can fit within the framework of “Clean Development Mechanisms” under Article 12 of the *Koyoto Protocol*.
- Government should give consideration to the development of both ethanol and cogeneration projects as it plans for land use in the near and medium term.

