IICA’s Contribution to the Development of Agriculture and Rural Communities in Trinidad and Tobago 2007

Port of Spain, Trinidad
March 2008
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**Acronyms**

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<th>Acronym</th>
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<tr>
<td>ADB</td>
<td>Agricultural Development Bank</td>
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<td>BDC</td>
<td>Business Development Company</td>
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<td>CARDI</td>
<td>Caribbean Agricultural Research and Development Institute</td>
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<td>CARIRI</td>
<td>Caribbean Industrial Research Institute</td>
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<td>CHBA</td>
<td>Caribbean Herbal Business Association</td>
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<td>CSME</td>
<td>Caribbean Single Market Economy</td>
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<td>ECIAF</td>
<td>Eastern Caribbean Institute for Agriculture and Forestry</td>
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<td>EMA</td>
<td>Environmental Management Authority</td>
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<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
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<td>FBIDC</td>
<td>Food and Beverage Industry Development Committee</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>HACCP</td>
<td>Hazard Analysis Critical Control Point</td>
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<td>IICA</td>
<td>Inter-American Institute for Cooperation on Agriculture</td>
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<td>IDF</td>
<td>International Development Fund</td>
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<td>IPM</td>
<td>Integrated Pest Management</td>
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<td>ISO</td>
<td>International Standards Organization</td>
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<td>MALMR</td>
<td>Ministry of Agriculture, Land and Marine Resources</td>
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<td>NAHFSA</td>
<td>National Agricultural Health and Food Safety Agency</td>
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<td>NAMDEVCO</td>
<td>National Agricultural Marketing and Development Company</td>
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<td>NRWP</td>
<td>Network of Rural Women Producers</td>
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<td>OAS</td>
<td>Organization of American States</td>
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<td>SIRG</td>
<td>Summit Implementation Resource Group</td>
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<td>SPS</td>
<td>Sanitary Phytosanitary</td>
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<td>THA</td>
<td>Tobago House of Assembly</td>
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<td>TTFAYA</td>
<td>Trinidad &amp; Tobago Foundation for Youth in Agriculture</td>
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<td>TTHBA</td>
<td>Trinidad &amp; Tobago Herbal Business Association</td>
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<td>UTT</td>
<td>University of Trinidad and Tobago</td>
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<td>WTO</td>
<td>World Trade Organization</td>
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<td>YAPPA</td>
<td>Youth Apprenticeship Programme in Agriculture</td>
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Message from the Representative

The IICA Office in Trinidad and Tobago is pleased to present to its valued stakeholders and collaborators, an account of the contributions that the Institute has made to the agriculture and rural sectors of Trinidad and Tobago for the year under review, 2007. As is customary within the Institute, each country Office accounts to its clients and stakeholders on an annual basis, as part of a model of participatory cooperation. Our annual report entitled: *IICA’s Contribution to Agriculture and the Development of the Rural Communities in Trinidad and Tobago*, is the first step in this process. The report documents the progress and results of our actions in 2007.

2008 is a special year for IICA as it marks 30 years of service to Trinidad and Tobago (1978-2008). The Office was first opened in January 1978, following the signing of the basic agreement with the Government of Trinidad and Tobago in 1977. To mark the occasion, IICA will be planning a programme of activities that will cater to all of our stakeholders and clients in Trinidad and Tobago.

The Institute would like to take this opportunity to recognize the members of staff of the IICA Office in Trinidad and Tobago for their combined efforts to deliver a vibrant programme of work which responds to the needs of many of the players in the sector both nationally and regionally. Our work at IICA is done in partnership with and with contributions from our stakeholders and for this we express our gratitude. In this light, we look forward to continued collaboration with our current stakeholders and to forging new partnerships that would be to the benefit of the agricultural sector of Trinidad and Tobago.

Gregg C.E. Rawlins
IICA Representative in Trinidad & Tobago
1.0 Introduction

The IICA Office in Trinidad and Tobago is guided by an annual work programme, which is set within and in response to the wider hemispheric and regional and national mandates of the Agro Plan 2003-2015, the Jagdeo Initiative and the Government of Trinidad and Tobago’s Vision 2020 respectively. The annual work programme is designed to respond to identified needs within the sector which the Office can reasonably and realistically attend to in its efforts to assist the country to achieve sustainable agricultural and rural development.

A key strength that the Institute brings to the table is its unique ability to draw on a hemispheric network of expertise and experiences that can be shared and translated for the benefit of stakeholders and beneficiaries within the Trinidad and Tobago context.

At the policy level, IICA continued to make key contributions to the sector, through support granted to the Ministry of Agriculture, Land and Marine Resources (MALMR) in preparation for their participation in hemispheric and regional fora to address agricultural development issues. Additionally, the Institute continued to facilitate the participation of a representative from the MALMR at the WTO/SPS meetings in Geneva, Switzerland. The meetings are critical in ensuring an increased understanding of the issues and rights under the WTO/SPS Agreement and affording the opportunity to participate in the decision-making process at that level.

In its contributions on another level, IICA’s working relationship with groups of beneficiaries was strengthened, viz rural women micro-entrepreneurs, young people involved in agriculture and herbal business operators. Through a new thrust on the development of agro-tourism, the Office forged new relationships with potential and existing operators of ventures that provide linkages between the agriculture and tourism sectors. IICA’s work with these beneficiaries has provided direction for them towards improved/increased knowledge acquisition, skills development and competitiveness at various levels.

Clients in Trinidad and Tobago and the wider Caribbean were granted continued access to a wealth of knowledge and information through the several websites and publications which are managed and produced out of the IICA Office in Trinidad and Tobago. These provided information and views on a variety of issues and initiatives in agriculture and rural life in the Caribbean, as well as information about the Office and its programmes.
2.0 Executive Summary

IICA’s contribution to the repositioning of agriculture and rural life
The Institute’s mandate in Trinidad and Tobago includes supporting the implementation of the AgroPlan 2003-2015 and participation in the Summit of the Americas process as a means of effecting agricultural repositioning. To this end, the efforts of the IICA Office in Trinidad and Tobago focused on continued support to the Ministry of Agriculture, Land and Marine Resources (MALMR) in promoting developmental and policy issues pertinent to agriculture and rural development. The Office completed a report which indicated that the contribution of extended agriculture sector contributes more than twice the amount to GDP than is traditionally reported in the national statistics. Additionally, an updated Status of and Outlook for Agriculture and Rural Life in Trinidad and Tobago 2006 was completed for presentation to the national authorities. In keeping with its hemispheric mandate, IICA provided support to the Ministerial Delegate in the conduct and coordination of the national consultation for the Agro Plan and in the preparation of the report to the Summit Implementation Resource Group (SIRG). To complement the hemispheric-led actions and increase awareness among public and private sector policy makers, IICA promoted the Jagdeo Initiative and the CSME as instruments for agricultural development in Tobago, which is attempting to revitalize its agriculture sector. These actions also respond to the Vision 2020 Goals for Trinidad and Tobago’s Agriculture Sector. (See Appendix I).

Promoting trade and the competitiveness of agribusiness
The Government of Trinidad and Tobago has prioritized the expansion of agribusiness as a strategic policy objective for agriculture generally and as a strategy to combat the escalating food prices. The support provided by the IICA Office in Trinidad and Tobago fits into this policy framework, including the policy analyses undertaken on the citrus and rice industries which provided recommendations for consideration of the government and industry for improving their competitiveness. A production manual for three selected fruits: sapodilla, sugar apple and soursop, was also prepared as a means promoting greater production and use of those fruits. Developing agribusiness at the rural and community levels also formed an integral part of this strategic thrust, both for agriculture and the development of rural areas. IICA’s interventions in this area aimed at empowering rural community groups to identify business opportunities and develop proposals for securing resources to enable agricultural enterprise start-up.

In addition to technical cooperation, IICA maintained its institutional and administrative support to the national chapter of the Caribbean Herbal Business Association (CHBA) to facilitate its development as part of a wider regional CHBA programme. Technical support included the joint preparation of three proposals for developing the local Trinidad and Tobago Herbal Business Association (TTHBA) chapter and the preparation of the first Caribbean Herbal Business magazine, which highlights inter alia the industry’s trailblazers and entrepreneurs, market and technical research and profiles on commercially viable herbs and spices. Administrative and logistic support from IICA enabled the TTHBA to assist with the organization and successful hosting of a regional
ICS-UNIDO workshop “Quality control, science validation and business prospects of medicinal plants and aromatic plants”. An important outcome of the workshop was the identified need to prepare an inventory of the medicinal plants of the region (country specific and endemic), determine those of commercial and/or scientific potential with available scientific information and develop a mechanism for governmental intervention and support both nationally and as a region.

In 2007, IICA convened a National Task Force on Agro-tourism which comprised 10 representatives from the public and private sector, to guide the development of a national programme for Agro-tourism. Additionally two agro-tourism workshops hosted by IICA were successful in enhancing understanding of the concept, the nature of the possibilities and identifying of business ventures in agro-tourism.

**Strengthening rural communities based on the territorial approach**

Strengthening business in rural areas is one of the key strategies for building vibrant rural communities. To this end, IICA initiated activities aimed at identifying appropriate measures and programmes to facilitate the development and diversification process in the Caroni agricultural development area which is transting from traditional sugar cane production. IICA’s interventions are guided by the Territorial Approach concept and strategies for rural development and in this light, a baseline study was conducted to identify and assess the developmental needs of a specific reference territory situated in the Caroni agricultural district.

Central to the Rural Development efforts of IICA in Trinidad and Tobago, is its continued support to the Network of Rural Women Producers (NRWP). In 2007, this support enabled the participation of two Network members at the World Congress on Rural Women in South Africa. Their participation provided greater exposure to similar networks and opened the possibilities for engaging in more creative self-sustaining development activities. Capacity building for women and youth, in a range of issues, including how to manage money and finance business also formed an important aspect of IICA’s support, with collaboration from the Agricultural Development Bank (ADB) and the National Agricultural Marketing and Development Corporation (NAMDEVCO).

**Introducing technology and innovation for the modernization of agriculture and rural life**

The Office continued to support the implementation of the regional strategy for biotechnology and biosafety. Two of the projects identified therein, focusing on capacity building and commercialization were completed and submitted to donors.
3.0 The State of Agriculture and Rural Life in Trinidad and Tobago in 2007

3.1 Changes in legislation and policies on agriculture and rural life

Many of the proposals outlined for taking the agricultural sector forward are contained in the Social and Economic Policy Framework 2006-2008. The Government’s Vision 2020 for Trinidad and Tobago addresses specific objectives with regard to agricultural development. (See appendix 1).

Renewed emphasis on agricultural development was identified, as a budget priority in the 2007 budget, as one mechanism for reducing food prices. The budget document of 2007 also contained some policy prescriptions that will impact directly on agricultural development and the rural milieu in the future. Policy prescriptions included inter alia:

- Intensification of the development of seven key industries including the food and beverage industry and provision of tax and custom tariff incentives, marketing and promotional assistance, skills training; research and development assistance and productivity enhancement support.
- Establishment of a national research and development fund to stimulate innovation and investment when the technology park (the Tamana Technology Park) is complete.
- Support establishment of small and microenterprises, including agroindustries through the operation of the National Enterprise Development Company which also provides training for business through its entrepreneurial Training Institute Incubation Centres.

During the 2006 period the University of Trinidad and Tobago (UTT) expanded its academic programme to include several teaching institutions, including the Eastern Caribbean Institute for Agriculture and Forestry (ECIAF). There are also proposals to integrate the Central Experimental Station of the Ministry of Agriculture Land and Marine Resources within the fold of the UTT. Free tertiary education offered by the Government will also be an incentive for persons who may wish to pursue degree programmes in agriculture as well as in other disciplines.

Persons involved in agriculture, food and beverage and other industries that discharge waste water into the environment are now requested to register with the Environmental Management Authority (EMA). Complying with that request will have cost implications for those sectors.

3.2 Institutional reforms in agriculture and the rural milieu

A major economic strategy of the Government, as articulated in its Vision 2020 Operational Plan is the need to achieve a broad-based economy where the structure of production is more balanced and where the economy is to some extent insulated from economic shocks generally from the outside. In pursuit of creating an enabling
environment for competitive businesses, the Government proposes to facilitate the process through the following initiatives:

- Establishment of a research and development fund for the non energy sector in order to stimulate and support investments in new and advanced technology and innovation.
- Embark on a business competitiveness programme to provide support enterprises in the non energy sector on a cost sharing basis.
- Conduct of investment promotion initiatives and development of collateral investment promotion material.
- International market development in order to assist businesses in their attempt to expand exports.
- Creation of a trade information network which will serve as an information hub for firms seeking to penetrate the international market.
- Development of the human resource management information system in order to establish a central data source on the labour market.
- Establishment of an occupational Safety and health agency to create a centralized, coordination institution to manage occupational safety and health matters at the workplace.
- Establishment of a science and technology park. The park will serve as a platform for a knowledge driven economy through the creation of viable industries and generation of job opportunities. A business incubator programme is also to be established.

The Food and Beverage Industry Development Committee (FBIDC) also continues to support agribusiness development by facilitating improvements to the regulatory, institutional and competitive environment of the food and beverage, fish and fish processing industries. To that end, the Committee undertook, inter alia, to:

- Host a research, innovation and development workshop for the food and beverage sector.
- Develop and implement a national food safety awareness programme.
- Host a market intelligence workshop for the food and beverage industry and complete a technology foresighting programme.
- Develop a strategic plan to increase research and development and innovation in the food and beverage sector.

The Government also plans to create 8 large scale farms which will have private sector interests. The large farms will facilitate large scale agricultural production as a means of reducing the high prices of agricultural commodities. The farms will be central for boosting the agroprocessing sector. There are plans to operate two additional farms in collaboration with the Government of Cuba. Emphasis is to be placed on the creation of medium and large farms and on providing the conditions to encourage the amalgamation of small plots into larger ones.
Other reforms articulated in the 2007 Budget which can be regarded as important institutional changes in the agricultural sector include:

- Expansion of the Youth Apprenticeship Programme in Agriculture (YAPPA) as well as the expansion of the agricultural programme at ECIAF;
- Establishment of a Praedial Larceny Police Unit;
- Increasing the number of Extension Officers;
- Provision of TT$30 million to the Agricultural Development Bank (ADB) to facilitate additional credit to the agribusiness sector;
- Reduce import duties on selected basic foods as a means of reducing the high price of food. The Government has mandated a state company to import selected foods as one means of providing cheaper food to consumers.

3.3 Agrifood trade and the development of agribusinesses

The Trinidad and Tobago agrifood market continues to be dominated by businesses that are heavily dependent on imported raw materials. Most producers prefer to purchase their raw materials which are often more competitively priced, more reliable and of better quality, in some cases. In a study conducted by the Inter-American Institute for Cooperation on Agriculture (IICA) in 2006, for example, it was estimated that the forward link of the primary agricultural sector, in terms of its contribution to GDP was only 1.68%.

It is however envisioned that the large farms will increase the supply of raw materials for industry and to increase value added in the sector. The farms are to be located in Jerningham, Edinburgh, Caroni, Orange Grove, La Gloria, Mon Jaloux and Picton Estate. Establishment of farms are expected to address the production of commodities identified for the National Agribusiness Programme, including root crops (cassava and sweet potatoes), vegetables (pumpkin and hot peppers), fruits (pawpaw and coconut), herbs, tilapia and rabbits.

In 2004, the State’s Standing Committee on Business, established a Food and Industry Team (FBIT). The Team prepared and submitted a Strategic Plan for development of the local food processing industry. The plan which has been accepted by Cabinet, was developed with inputs from governmental agencies, academia and other stakeholders.

Some of the major recommendations of the Strategic Plan include the need for more technical support for product and technological development to enhance international competitiveness. Others include establishment of a system of registration and mandatory certification of food importers, processors and distributors to improve food safety and food quality. Focus is also to be placed on research, development and innovation.

The Research, Development and Innovation Sub Committee of the FBIDC proposes to host a seminar in 2008 to highlight to processors as well as other operators in the food and beverage industry, new and value-added product opportunities available to food and
beverage processors. The seminar will highlight the work of key research and development agencies and private companies in the development of new products. Emphasis will also be placed on the use of local inputs in the development of value-added products. A Standing Committee on Business Development has also completed a draft strategic plan for development of the Fish and Fish Processing Industry.

In view of the many challenges faced by the industry, the FBIDC has proposed several strategies for improving the industry. The major strategies proposed include:

- Collaboration with stakeholders in conducting a food safety awareness programme
- Updating food safety standards and environmental compliance legislation
- Development of technical competences among participants through education, training, and certification in food safety best practices.
- Facilitating increased access to capital to small and medium sized operators, specifically for upgrading food safety standards.
- The creation of appropriate legislation and systems for monitoring and enforcement to protect against unfair trade practices
- Increasing market enforcement capability
- Provision of technical support and development of institutional capability for new product development

Commercial processing and marketing ventures

A survey conducted by the Ministry of Trade and Industry on the local food and beverage industry found that there were 8 major challenges faced by the industry in their production processes. These challenges are in the area of meeting international food safety and health standards; product development; raw material supplies; marketing intelligence; managerial and technical expertise; economies of scale; accessing finance and delays at clearing goods at the Customs Department (Food and Beverage Report, Ministry of Trade and Industry, 2005).

Specifically, the survey showed that very few local companies met international food safety requirements. In most cases, this situation existed because most of them lacked the financial resources for establishing the necessary infrastructure and systems to meet the required standards. The survey also found that the industry lacked innovativeness in product development and did not have the necessary capacity to develop new high-valued innovative products.

The industry had a problem of varying consistency in the quantity and quality of raw material supplied. It was also found that most of the firms in the industry did not have the managerial and technical expertise in such areas as costing and pricing, business planning brand development, preparation of marketing plans and record keeping. They also did not possess the resources to conduct market research.
Further, because of their relatively small size, most of the companies did not have the economies of scale to permit them to have lower costs and efficiencies in production. The report also indicated that the capital market for financing small and medium size enterprises was relatively under developed. Additionally, most food and beverage firms had to maintain excessive inventories as a result of inordinate delays in clearing goods at the Customs Division

**Trade Aspects**

The value of food imports increased steadily during the period 2002-2005, but decreased somewhat in 2006. Food exports, on the other hand, grew steadily over the same period, but declined in 2006. Over the period 2004 to 2006, food exports grew at an annual average growth rate of +1.10% while food imports grew at a negative rate of -3.65%. There were significant increases in the value of imports of cauliflower (98.08%), cabbage (51.15%), sweet potatoes (43.68%); dasheen (123.14%); ginger (41.57%) and pigeon peas (97.7%).

Commodities which generated the highest levels of foreign exchange in 2006 included: Hot peppers ($11.81 million); pumpkin ($6.5 million); tomatoes ($1.75 million) and water melon ($1.0 million). The value of foreign exchange generated from exports of most of these commodities however decreased in 2006 when compared to their value in 2004. The most significant decreases in exports were noted for eddoes (99.65%); sweet potatoes (96.36%); cabbage (60.53%); sweet peppers (43.84%); hot peppers (27.03%) and watermelons (24.37%).

The major categories of food exports in 2006, expressed as a percentage of all food exports, were: cereal and cereal preparations (27.57%); sugar and sugar preparations (23%) and fruits and vegetables (22.21%). The major categories of food imported in 2006, expressed as a percentage of all food imports were: fruits and vegetables (19.95%); cereals and cereal preparations (19.08%) and dairy products and eggs (14.19%). In most instances, imports of food in almost all of the categories had increased in 2006, when compared to their corresponding values in 2005.

The largest increases were recorded for animal feed stuff (35.23%) and sugar and sugar preparations (10.40%). Increase in foreign exchange spent on importing grain is largely a result increasing cost of grain on the world market. In 2006, the majority of the country’s food exports (74.56%) were exported to Jamaica (37.23%); USA (19.68%) and to Guyana (17.65%).

**3.4 Agricultural health and food safety**

The Animal Health and Production Division and Crop Research Divisions of the Ministry of Agriculture Land and Marine Resources are the principal custodians of agricultural health and food safety in the country. The major focus over the last year has been efforts to bring the National Health and Food Safety Agency one step closer to reality, with completion of a Plan to establish an Integrated National Agricultural Health and Food...
Safety System in Trinidad and Tobago. The plan was completed by the Business Development Company (BDC) for the National Agricultural Health and Food Safety Committee (NAHFSC).

The Plan addresses, inter alia, a strategic direction for the proposed NAHFSA with respect to:

- Its vision, mission, and core values;
- The range of stakeholders, their needs, contributions and likely sources of influence over the NAHFSA;
- The information sources currently available to conduct an environmental scan for the proposed NAHFSA;
- The strategic priorities for NAHFSA;
- Possible models for the organizational structure of the Authority;
- Possible approaches and methods for working with the regional CARICOM CAHFSA bodies;
- Performance objectives and performance measures for the Authority.

Following the simulation exercises conducted by The National Avian Influenza Task Force to test the readiness of the country for a bird flu outbreak, an evaluation was conducted and steps are now being conducted to correct the shortcomings identified. A further simulation exercise is planned to test the upgraded system.

Trinidad and Tobago, as a member of the WTO Agreement, was required to establish an SPS enquiry point to answer all reasonable questions regarding SPS measures from WTO member countries. The Ministry of Land and Marine Resources, Research Division continues to maintain the enquiry point.

The work of the crop and Livestock Divisions is also central to maintaining the integrity of the agricultural health and food safety systems of the country. The Division, for example, focuses on the institution and enforcement of quarantine measures and conduct risk analyses to determine the incidence of plant pest and disease. Specifically, the Division is currently pursuing several action plans to contain the spread of pest and diseases. These action plans, which are on-going, include:

- A programme to reduce the spread of the Citrus Black Fly in citrus by the release of natural enemies of the Citrus Black Fly
- A programme to contain the spread of the Black Sigatoka Disease in banana and plantains through promotion of good agricultural practices, proper use of fungicides and by introduction of resistant varieties. The disease is now widespread in Trinidad
- A programme to control the coconut moth
- A programme to contain the Red Palm Mite which was detected in March 2006 in the South Western Peninsula of the country and is spreading to other parts. This disease attacks coconuts and bananas.
- A programme for containing the Red Fire Ant, a pest of public health importance
- Surveillance programmes to detect exotic fruit flies such as the Mediterranean Fruit Fly
- Programmes to prevent the introduction of the Giant African Snail and Paw Paw Mealy Bug from entering the country

The Ministry is also actively pursuing several other initiatives either to promote food safety or to comply with international requirements. The Ministry of Agriculture, Land and Marine Resources, for example, continues to promote Integrated Pest Management (IPM) as a means of reducing pesticide use and recently embarked on bio-rational spraying programmes, based on spraying at particular pest threshold levels. Legislation is also being drafted to ensure that citrus plants sold are of good quality and free of specific diseases.

The Legislation is being drafted along the lines of the FAO Plant Protection Legislation. Procedures were also put in place to ensure that pallets used in the export trade were ISPM 15 compliant. Food safety is also promoted by the MALMR, in conjunction with the Ministry of Health, by conducting education programmes that target persons who handle or cut up vegetables in supermarkets and by certifying farms that wish to export produce to Barbados or supply certain local supermarkets.

The Division of Animal Production and Health also has other programmes in place for safeguarding livestock and its products. The major programmes include testing of milk delivered to Nestlé for Brucellosis and the Bovine Leucosis, Rabies and TB testing and monitoring programmes.

In another study conducted by the Food and Beverage Committee, of the Ministry of Trade and Industry in 2005, it was found that only one large local company (of the twelve companies interviewed) had ISO or HACCP certification. The majority of the other large companies had started to put systems in place to become ISO and HACCP certified but had much more work to do before achieving that status. The smaller companies were generally not concerned with ISO and HACCP generally they were too costly to implement.

### 3.5 Agricultural innovation, science and technology

Institutions which may be considered as the driving force behind technological change in the agriculture sector include the Ministry of Agriculture Land and Marine Resources, the Caribbean Agricultural Research and Development Institute (CARDI) and the Caribbean Industrial Research and Development Institute (CARIRI).

Research activities of the MALMR that are important in contributing to technological change in the agrifood sector include:
• Management of bacterial Leaf Spot in sweet peppers
• Development of alternative methods to the traditional use of chemical pesticides for control of pests
• Development of integrated pest and crop management programmes for improving the quality and yields of hot pepper
• Studies on the aetiology and epidemiology of bodi
• The effects of different packaging material on the viability of seeds in storage.
• The use of G.I.S technology in the management of soils.
• Development of germplasm for ornamental crops
• Progeny and varietal trials in cocoa and coffee
• Fertilizer requirements in a wide range of fruits.

Research activities of the CARIRI that impact on technological changes in the agrifood sector:

The Caribbean Industrial Research and Institute’s (CARIRI) contribution to technological advancement in the agrifood sector has largely been confined to the manufacture of machinery and equipment for the food processing sector including multipurpose graters, fruit chippers, stainless steel kitchen sinks, fruit washing conveyors and press for squeezing the juice of fruits. The institute also conducts research in the areas of biotechnology; analytical chemistry and microbiology and environmental services.

Research in analytical chemistry and microbial include: Testing and analysis of raw materials and finished products and testing of product for bacteria and coliform. Other microbial research includes portability testing, biocide evaluation, bioremediation, industrial effluent monitoring and biochemical oxygen demand. CARIRI is also involved in product development, nutritional profiles as well as in sensory evaluation of products and microbial analysis. They also offer services in the design and layout of processing plant facilities and training in various aspects of plant and food processing technologies (including production of tropical fruit wines, cured meats, candied fruits, sauces, jams and snack foods.

The University of the West Indies

The University of the West Indies is principally involved in the training of personnel in the development, design and use of machinery and equipment and various technologies used in the agrifood and food processing sectors. Courses offered by the University of the West Indies at the post graduate level, which are applicable to the agrifood sector include food and science technology, mechanical and manufacturing engineering, agricultural engineering (biosystems engineering).

The programme in food science and technology covers *inter alia* food chemistry and microbiology; food quality assurance; food process engineering; beverage processing; food analysis; food packaging; food processing laboratories; preservation and processing of fruits, vegetables, meats and poultry and seafood as well as food processing and sensory evaluation of food. In the masters and post doctoral programmes in agricultural
engineering (biosystems engineering) teaching and research is offered in three main areas: engineering design, crop processing, food engineering and post harvest technology and soil and water engineering.

The focus in the engineering design programme is to train students to carry out research and development in the area of tool and equipment design for agriculture and related industry, including field equipment for crops and products and pre-processing equipment for the food industry. The degree programme in crop processing and post-harvest technology covers inter alia crop processing and post harvest technology of perishables, product and process development, development of improved systems to process and store tropical crops and food products.

The research degree in soil and water engineering is aimed at training graduates in irrigation and draining engineering, soil engineering and conservation engineering, irrigation design and planning as well as techniques for modifying in order to improve soil workability by farm machinery and to minimize soil erosion.

In the Department of Life Sciences, students are exposed to a wide range of courses in technologies applicable to the agrifood and food processing sector, including aquaculture and fisheries research. The department also has a biochemistry facility and facilities for teaching biotechnology. A biodiversity centre is proposed. At the biotechnology unit, research is carried out inter alia in microporopogation, plant pathogenic bacteria and fungi, molecular biology of plant organisms.

The biotechnology lab consists of a tissue culture lab, a well equipped molecular biology laboratory consisting of a high speed centrifuge, freezers, spectrophotometers, DNA floriometers, transilluminator, with a photodocumentation system, Millipore water system, hybridization oven, dot blot and southern blotting apparatus, incubator, programmable water bath, gel apparatus for DNA and isozyme and electrophoresis.

**The CARDI**

The Caribbean Agricultural Research and Development Institute (CARDI) makes its contribution towards technological advancement of the agricultural sector through its research activities which focus on post harvest technologies, organic and crop production systems and IPM.
4.0 Results of the implementation of the National Technical Cooperation Agenda in Trinidad and Tobago during 2007

a. IICA’s contribution to the repositioning of agriculture and rural life

IICA assisted the Ministry of Agriculture, Land and Marine Resources (MALMR) with the promotion of developmental and policy issues pertinent to agriculture and rural development. The Office provided support to the Ministerial delegate to conduct and coordinate the national consultation for the Agro Plan 2003-2015 and to prepare the report to the Summit Implementation Resource Group (SIRG). Following this, the delegate participated in the Fourth Ministerial meeting "Agriculture and Rural Life in the Americas" in Antigua, Guatemala. The delegates were updated on progress in developing the Information System for Evaluating and Monitoring the AGRO 2003-2015 Plan and also discussed topics of strategic importance for the sustainable development of agriculture and the rural milieu in the hemisphere.

At that meeting the delegates signed an agreement in which they reaffirmed their commitment to the implementation of the AGRO 2003-2015 Plan, to promote with agriculture stakeholders a broad-based approach to thinking and acting in agriculture and the rural milieu and, to work together to improve agriculture and rural life in the Americas.

In its continued efforts to reposition the agricultural sector and demonstrate the true contribution of agriculture to the overall national economic performance, the Office completed a report which indicated that the contribution of extended agriculture sector contributes more than twice the amount to GDP than is traditionally reported in the national statistics. Additionally, an updated Status of and Outlook for Agriculture and Rural Life in Trinidad and Tobago 2006 was completed for presentation to the national authorities. The document, which remains unique, provides a valuable update of progress in the sector.

In response to a request from the Tobago House of Assembly (THA), IICA delivered a one-day seminar which promoted the Jagdeo Initiative and the Caribbean Single Market Economy (CSME) as instruments for agricultural development in Tobago, which is attempting to revitalize its agriculture sector.

b. Promoting trade and the competitiveness of agribusiness

The Government of Trinidad and Tobago has prioritized the expansion of agribusiness as a strategic policy objective for agriculture generally and as a strategy to combat the escalating food prices. In August of 2007, the Government of Trinidad and Tobago held a National Consultation on Rising Food Prices, drawing much national attention to the issue. IICA was among many agriculture and food agencies invited to make a presentation on its perspectives on the issue and to offer suggestions as to how they can be addressed.
Cost of production studies were also done for 4 commodities identified by the MALMR for development and promotion. These commodities include: hot pepper, tilapia, shadow beni and sweet potato. Costings were done with the use of a spreadsheet model that facilitates re-estimations when prices, costs or technical parameters change.

...commodity policy studies

In its efforts to assist the country in implementing appropriate policies and programmes to develop agriculture and the rural spaces, IICA commissioned policy analyses on the citrus and rice industries and made recommendations for their improvement. Stakeholders from within the industry will benefit from two new documents: Policy Recommendations for the Citrus Industry of Trinidad & Tobago and Policy Recommendations for the Rice Industry of Trinidad and Tobago which were completed under this initiative.

Stakeholders in the tropical fruit sub-sector and the public in general, are set to benefit from a production manual for three selected fruits: sapodilla (*Manilkara zapota* van Royen), soursop (*Annona muricata* L.) and sugarapple (*Annona squamosa* L.). The manual provides very useful guidelines for successfully cultivating those fruits as well as information on their nutritional value. Strategies for expansion of the industry are also identified therein.

The Institute continued its support to the development of agribusiness at the rural and community levels. IICA worked closely with several farmers groups to address specific business and developmental needs identified. Support included the identification of business opportunities for two groups and assistance in developing proposals for securing resources for establishment of a nursery shed and irrigation ponds. The farmers groups assisted were from Fishing Pond and Plum Mitan, both in Sangre Grande and La Trinidad Farmers Association in Brazil Village.

...support to herbal business

IICA Trinidad and Tobago maintained its institutional and administrative support to the national chapter of the Caribbean Herbal Business Association (CHBA) to facilitate its development as part of a wider regional CHBA programme. Technical support included the joint preparation of three proposals for developing the local Trinidad and Tobago Herbal Business Association (TTHBA) chapter and the preparation of the first Caribbean Herbal Business magazine. The magazine highlights *inter alia* the industry’s trailblazers...
and entrepreneurs, market and technical research and profiles on commercially viable herbs and spices. The first issue of the magazine is being distributed widely across the region in an effort to garner investor interest in and support for the development of the industry.

Administrative and logistic support from the IICA Office enabled the TTHBA to assist with the organization and successful hosting of a regional ICS-UNIDO workshop “Quality control, science validation and business prospects of medicinal plants and aromatic plants”. The workshop was the first of its kind in the region and was well-attended by 40 professionals from across the region. The workshop concluded with the presentation of several key recommendations for a way forward, including the need for:

- An inventory of the medicinal plants of the region (both country specific and endemic),
- Determination of those plants of commercial and/or scientific potential with available scientific information
- Governmental intervention and support both nationally and as a region.

**…strengthening agro-tourism linkages**

In 2007, IICA convened a National Task Force on Agro-tourism which comprised 10 representatives from the public and private sector, to guide the development of the national programme for Agro-tourism. A seminar organized by IICA entitled “Opportunities in Agro-Tourism”, drew wide participation from public and private sector stakeholders as well as operators in agriculture and tourism. It was successful in enhancing an understanding of the concept, the nature of the possibilities and identifying of business ventures in agro-tourism.

Stakeholders in the area of agrotourism also participated in a workshop, the aim of which was to prepare a national strategy for agro-tourism in Trinidad and Tobago. This was executed as an activity under the IICA/OAS project “Strengthening of the Tourism Sector through the Development of Linkages with the Agricultural Sector in the Caribbean”. The process is ongoing as the document is currently being finalized for review by the stakeholders in 2008.
IICA also supported the Travel Foundation Tobago which facilitated two workshops on 1. techniques in the preparation of seedlings and 2. organic gardening for young people in Tobago. The training was delivered as support for groups that are engaged in activities which reinforce linkages between the agriculture and tourism sectors, such as the Adopt-a-Farmer programme and the Organic School Garden Project.

c. Strengthening rural communities based on the territorial approach

…Caroni Baseline study

The Caroni agricultural development area, which is currently transiting from traditional sugar cane production, was the focus of IICA’s interventions guided by the Territorial Approach to Rural Development. The IICA Office in Trinidad and Tobago initiated activities aimed at identifying appropriate measures and programmes to facilitate the development and diversification process in the Caroni agricultural development area, through the commencement of a Baseline Study to identify and assess the developmental needs of the Caroni agricultural district. The outcome of the study will determine the multidisciplinary programme of work that IICA will negotiate in collaboration with other key stakeholders, for developmental work in that area. A workshop was also conducted for the benefit of 15 former workers of Caroni 1975 Ltd. Emphasis was placed on development of business proposals to enable them to secure resources for cultivating their 2 acre plots granted by the State.

…support to rural women and youth in agriculture

Central to the Rural Development efforts of IICA, is its continued support to development of micro-enterprise among women and young people involved in agriculture. In 2007, this support enabled the participation of two members of the Network of Rural Women Producers (NRWP) at the World Congress on Rural Women in South Africa. The week-long meeting of rural women from across the world, provided greater exposure for the women to similar networks and opened the possibilities for engaging in more creative self-sustaining development activities. The capacity of women and young people to finance their businesses and manage money was increased through the delivery of two workshops entitled: “Making my Money work for me” and “Business 1-2-3”. These were conducted in collaboration with the Agricultural Development Bank (ADB) and the National Marketing and Development Corporation (NAMDEVCO). Additionally, the members of the executive of the Trinidad and Tobago Forum for Youth in Agriculture (TTFAYA), increased their leadership skills, through a workshop on Group Dynamics and Leadership.
The Office further contributed to the development of youth through its support to the agribusiness programme of the University of the West Indies (UWI). As is customary, the office selected two of the students from the Faculty of Science and Agriculture to be part of their eight-week internship programme. During the period, the students improved their capacities in project preparation and assisted in the planning of a market survey.
5.0 Results of inter-agency cooperation with other international and regional organizations

OAS
The IICA Office continued its working relationship with the Organization of American States (OAS) under the umbrella of agro-tourism, in managing the IICA/OAS project “Strengthening of the Tourism Sector through the Development of Linkages with the Agricultural Sector in the Caribbean”. The OAS is also represented on the Agro-Tourism task force that was established in 2007.

6.0 New opportunities for technical cooperation

- Assistance to the Citrus Growers Association (CGA) on developing the local citrus industry, through exposure to production/processing models in other parts of the hemispheric system
- Assistance to NAMDEVCO in developing certain aspects of their market and support service, including the application of Good Agricultural Practices (GAPs) and the adoption of grades and standards
- Collaboration with TTABA in developing the agri-food chain
- Improving the livelihoods of rural communities by sourcing resources for specific projects in their communities and delivering an integrated package of technical assistance
- Expanded work in the area of developing agro-tourism linkages in both Trinidad and Tobago
- Provision of technical assistance in supporting the development of the local herbal industry.

7.0 Main activities organized by IICA

Opportunities in Agro-Tourism. June 8, 2007
40 persons sensitized to the opportunities, potential and existing ventures in agro-tourism in Trinidad and Tobago.

Making my Money Work for Me.
Rural women entrepreneurs more aware of issues concerning better money management in their business as well as in their daily lives. Jointly facilitated by IICA and the Agricultural Development Bank (ADB).

Stakeholders convened to assist consultant in fine-tuning a document that would form the basis of a national strategy for agro-tourism. Facilitated by Consultant Cliff Hamilton.
Quality control, science validation and business prospects of medicinal plants and aromatic plants. October 1-3, 2007
Regional workshop facilitated by ICS-UNIDO with support from the Trinidad and Tobago Herbal Business Association (TTHBA).

Rural women and youth groups benefited from a one-day workshop during which their knowledge of business start-up, finance and marketing would have been increased or enhanced. Jointly facilitated by the ADB, IICA and NAMDEVCO.

Group Dynamics. December 11, 2007
Executive of the TTFAYA strengthened by greater understanding of and knowledge on leadership and group dynamics. Facilitated by IICA.
9.0 List of publications


Francis, D.; Rampersaud, R. 2006. In a Nutshell: Risks in Agriculture – a key binding constraint. Trinidad and Tobago: IICA.

IICA Office in Trinidad & Tobago. 2007. IICA’s Contribution to the Development of Agriculture and Rural Communities in Trinidad and Tobago 2006. Trinidad and Tobago: IICA.

Parke, A.; Harry, E. (Eds.) Tropical fruits newsletter. No. 49, December 2007
## 10.0 Staff

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Appendix 1 - Vision 2020 Goals for Trinidad and Tobago’s Agriculture Sector

The overarching development policy objectives that embrace the Vision 2020 mission for the agriculture sector in Trinidad and Tobago are to:

- Improve agricultural production and productivity while sustaining the country’s renewable natural resources
- Increase the contribution of the agricultural sector to GDP
- Improve nutritional security and food sovereign
- Facilitate competitiveness and improve profitability in agriculture and public investment in agriculture
- Increase the involvement of youth in agriculture and facilitate successful succession planning within the sector
- Pursue a sustainable rural development agenda
- Promote the sustainable development of the fisheries sub sector
- Develop an adequate and reliable agricultural information system
- Expand the access road programme, as well as intensify its efforts to develop new access roads through a plan of action that includes developing a geographic information system database to evaluate the usage of existing and prospective access roads
- Develop a land information system
- Expand the youth apprenticeship programme in agriculture to encourage young entrants into the sector