

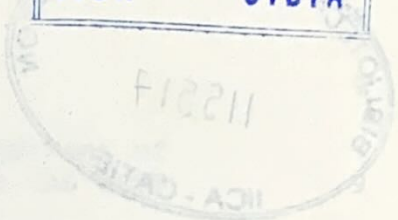
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AGRICULTURAL INFORMATION
OFFICE OF IICA IN GRENADA
REPORT OF REVIEW
TECHNICAL COOPERATION IN FARMING

Support for the Organization and Development of
Technology Generation and Transfer in the
Strengthening Farmer Organizations in the OECS
Strengthening Plant Protection and Quarantine
Capabilities in the Windward Islands and Antigua
and Barbuda for the Marketing of Non-Traditional
Crops

AGRICULTURAL ACTIVITIES
OECS Strengthening Programme
Agricultural Sector ANNUAL REPORT
Strengthening Antigua and Barbuda and
St. Vincent and the Grenadines TO THE
GOVERNMENT OF GRENADA
1988

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IICA OFFICE IN GRENADA

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GENERAL INFORMATION

The Inter-American Institute for Cooperation on Agriculture (IICA) is an international organization with full legal standing. It is governed by its Member States, currently thirty one (31), which are responsible for guiding, monitoring and evaluating the Institute's operations.

The following countries are Members of IICA: Antigua and Barbuda, Argentina, Barbados, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, United States of America, Uruguay and Venezuela.

The contributions of the Member States, as well as relations IICA maintains with 12 Permanent Observer Countries and numerous international organizations, allow the Institute to channel significant human and financial resources toward the agricultural development of the hemisphere. IICA's Permanent Observer Countries are: Austria, Belgium, Egypt, Federal Republic of Germany, France, Israel, Italy, Japan, Korea, Netherlands, Portugal and Spain.

The Inter-American Board of Agriculture (IABA) is the Institute's highest Governing Body. The IABA is made up of representatives of all the Member States, meets regularly every two years primarily for approval of policy guidelines and the two-year program budget.

The Board works through an Executive Committee which meets every year at IICA's Headquarters in San Jose, Costa Rica and is composed of representatives of twelve (12) Member States, three (3) from each of IICA's four (4) geographical areas, Central, Caribbean, Andean and Southern. Member States are elected for two year periods on a staggered rotational basis which ensures degrees of continuity.

The General Directorate is the executive body of the Institute, headed by the Director General, elected every four years and made up of Administrative and Technical Units responsible for coordinating and implementing the Institute's actions in accordance with policies established by the IABA.

The Medium Term Plan is the tool designed for steering IICA's activities for a specific period, presently 1987 to 1991. The Plan is based on resolutions of the IABA, the proposals of the Director General and recommendations of a group of experts on IICA's future orientation following an evaluation conducted in collaboration with Member States.

The Ninth Inter-American Conference of Ministers of Agriculture was held in Ottawa Canada in 1987. The Ministers endorsed the Medium Term Plan and mandated IICA to develop a Plan of Joint Action for Agricultural Reactivation to fulfill recommendations under the Ottawa Declaration. This Joint Action Plan will be presented to the IABA at its next meeting in 1989.

The Institute's activities, in cooperation with the countries, are channeled through its five programmes.

I Agricultural Policy Analysis and Planning

Definition of an economic policy that contributes to improving the profitability of agriculture and the security of the rural population. Need for actions in support of sub-regional groups and national agencies to improve analytical and advisory skills in order to strengthen institutional systems for the design, execution and adjustment of agricultural policies.

II Technology Generation and Transfer

Strengthening the organization and management of the technology generation and transfer systems to make better use of available resources and promotion of horizontal cooperation among national and regional research and extension institutions as technological innovation lies at the heart of the new hemispheric strategy for agricultural reactivation and modernization.

III Organization and Management for Rural Development

The elimination of poverty requires specific measures aimed at increasing food security for the population with emphasis on revitalizing the economy through addressing the problems that affect the largest sector of the population, the small scale farmers.

IV Marketing and Agro-industry

Promotion of agricultural trade between countries by Product improvement and development with removal of barriers and restrictions.

V Animal Health and Plant Protection

Strengthening of Animal Health and Plant Protection institutions to prevent, control and eradicate diseases and pests of major economic importance and those which impact on Trade.

The Institute's office, headed by a representative in a member country, is the institutional and administrative base for maintaining relationships with government authorities, providing logistic support to IICA's Program Activities, executing approved

projects, providing technical assistance and developing projects for funding and implementation.

The Institute has developed an Investment Projects Centre (CEPI) for agricultural pre-investment and a special Project Unit for the Caribbean area located in Barbados with similar purpose.

The Inter-American Agricultural Documentation and Information Centre (CIDIA) offers services related to subject areas selected for action by the Institute's programs.

In agreement with member countries within the Organization of Eastern Caribbean States (OECS) IICA has adopted a joint strategy and is presently executing the following projects:

- Program II - Support for the Organization and Management of Technology Generation and Transfer in the Eastern Caribbean States.
 - Strengthening the Technical Capability for Fruit Production Systems in the Eastern Caribbean States.
- Program III - Strengthening of Farmer Organizations in the Windward Islands and Antigua and Barbuda.
- Program V - Strengthening Plant Protection and Quarantine Capabilities in the Windward Islands and Antigua and Barbuda for the Marketing of Non-Traditional Crops.

Member countries also participate in the following Multinational Projects.

- Program I - Regional Project Unit for the Caribbean
 - Design of Strategies for Agricultural Policy Analysis and Planning.
- Program II - Technology Generation and Transfer
- Program V - Survey and Monitoring of Animal and Plant Diseases
 - The Caribbean Animal and Plant Health Information Network (CARAPHIN).

The First Regular Meeting of the Inter-American Council of Agriculture (IACA), the executive authority of the Institute, took place in Buenos Aires, Argentina in August 1961 under the aegis of the Convention which had been ratified on December 3, 1959.

The Second Regular Meeting of the IACA was held in Kingston, Jamaica, October 1963 and attended by Grenada, Dominica, St. Lucia and St. Vincent from the sub-region. These countries also attended the 3rd Regular Meeting of the IACA held in Montevideo, Uruguay in October 1965.

HISTORY OF IICA IN GRENADA

Grenada became a member of IICA in May 1979. An office was opened in April 1980 in the Ministry of Agriculture's Building - Botanic Gardens, St George's, with a staff of three, the IICA Director, Mario Franca and two Secretaries.

In January 1981, the office was moved to its present location No. 25 CARIFTA Cottage, Morne Rouge. It is the only remaining structure of its kind to have withstood the test of time and damages caused during the intervention in Grenada in 1983. The Government has advised that the site will be required for other purposes but as yet no suitable relocation has been identified.

During 1983, Dr Reginald Pierre was appointed Director/Representative for Grenada, Dominica, St Lucia and following his transfer to IICA Headquarters in San Jose, Costa Rica as Area Director for the Caribbean, he was replaced by Franz Alexander on May 15, 1987. The Area Director will be relocated in Barbados from April 1989.

Two other international professionals Jerry La Gra, Specialists in Marketing and Rural Development and Dr Antonio Pinchinat, Specialist in Technology Generation and Transfer, operate out of the St Lucia Office since 1985 and 1987 respectively.

Two national professionals were engaged in project activities-

Plant Protection - Cyril Dominique - from 1984 - 1987
Technology Generation and Transfer - Cosmos Joseph - from 1981

Since 1983 the latter also functions as Administrative Coordinator. At the end of 1987 Cyril Dominique completed project assignments and was subsequently appointed Chief Technical Officer in the Ministry of Agriculture.

Institutional Activities

The First Regular Meeting of the Inter-American Board of Agriculture (IABA), the maximum authority of the Institute took place in Buenos Aires, Argentina in August 1981 under the new Convention which had been ratified on December 8, 1980.

The Second Regular Meeting of the IABA was held in Kingstown, Jamaica, October 1983 and attended by Grenada, Dominica, St Lucia and St Vincent from the sub-region. These Countries also attended the 3rd Regular Meeting of the IABA held in Montevideo Uruguay in October 1985.

The Fourth Regular Meeting of the IABA was held in August/September 1987 in Ottawa Canada and attended by Antigua and Barbuda, Dominica, Grenada, St Lucia, St Vincent and the Grenadines. At this meeting, ratification of IICA membership occurred for Antigua and Barbuda, St Vincent and the Grenadines.

Special meetings of the IABA were held in Costa Rica in 1981, 1982 and in Mexico in 1986.

Regular Meetings of the Executive Committee are held each year in Costa Rica the first in 1981. The Second and Third Meetings were attended by Grenada, the Fourth and Fifth by Dominica and the Fifth and Sixth by St Lucia. Grenada attended in 1988 and will also in 1989.

Technical Cooperation Actions have included:

- A Caribbean Workshop on Traditional and Non-traditional Fruit Tree Crop Development - November 1980
- Institutional Strengthening of the Agricultural Marketing Subsector - 1980
- A comprehensive study and analysis of the Agricultural Marketing System 1981-82
- Support for the Agricultural Products for Domestic and External Consumers - 1985
- Production and Marketing Study of Selected Fruit Crops in the Windward Islands sub region - 1986
- Upgrading Crop Management Abilities - 1981-92
- Training Research and Development of Agricultural Production 1983-1986
- Association Community Enterprise Project - Perseverance Estate - National Agricultural Planning System
- Workshop on Farm Planning for Extension Agents - 1985
- Strengthening the Agricultural Planning Unit of the Ministry of Agriculture
- Investigation of Witches Broom Disease - 1980
- Crop Protection in Grenada 1981
- Control of thrips in Cocoa 1981

- Economic Impact of Moko Disease 1983
- Survey of Pests in Stored CACAO 1981
- Training in Plant Protection and Pesticide Management 1983 - 1985
- Establishment of a Diagnostic Laboratory for Plant Pests and Diseases FAO/IICA 1985
- Increasing Plant Protection Skills in the Ministry of Agriculture 1984-1987
- Monitoring the Fruit Fly Survey in Grenada and St Vincent 1986-87
- Prepared Project for the Improved "Delivery of Veterinary Services" 1984-1985
- Feasibility of Animal Health Information and Surveillance System CARICOM/IDRC/IICA/North Carolina State University 1987
- Participation in Regional Animal Health and Plant Protection Programmes from 1980 to 1987
- IICA/CDB Study of Fruit Sub Sector in the Windward Islands Comprehensive Study of the production and marketing of fruit in Grenada 1987
- Technical assistance for Training Course in Post Harvest Handling of Perishable Crops - Davis California, USA - 1987
- Project Profile - Strengthening of Small Farmer Organizations in Grenada 1987
- Strengthening Agricultural Technology Generation and Transfer Systems in the Windward Islands. Functional reorganization of the National Agricultural Research System - 1987
- Agricultural Sector Assessment for Project Identification - 1987

SUMMARY OF REPORT

Three major technical cooperation projects were approved during the year to promote IICA's strategy in support of the policy for Agricultural Diversification of its member states.

The Technology Generation and Transfer Project had already commenced in St Lucia during 1987 and collaborated with the Technical Team from the Ministry of Agriculture for the development and formulation of projects for its National Plan. Six (6) Crop and Livestock Development Programs were produced including thirteen (13) project profiles, nine (9) of which will be implemented immediately. The Project enjoyed fruitful collaboration with many agencies and supported the revitalization of the National Advisory Agricultural Council promoted by the Hon Minister of Agriculture.

Similar initiatives were replicated in Grenada and Dominica. In Grenada seven (7) programs were developed while in Dominica the Ministry of Agriculture was assisted in the preparation of their Work Plan for 1988-1990.

The Project received endorsement in Antigua and St Vincent which countries also benefitted from the joint activities executed in the subregion.

The Project "Strengthening of Farmers Organizations" promoted the institutionalization of the Inter-Island Steering Committee of Farmers Organizations with representatives from both crop and livestock farmers from each Island. Profiles of farmers organizations have been prepared with assistance from Peace Corps Volunteers and pilot projects prepared for external funding. A computer program for the management of on-farm production and marketing data was developed and tested while three editions of "FOCUS on Integrated Rural Development", a quarterly newspaper, were published.

The Project - Strengthening of Plant Protection Capabilities highlighted training of Ministry personnel and farmers in disease recognition and control procedures as well as pesticide management. Special brochures were also prepared and distributed on specific subjects. A workshop was conducted to promote uniform regulations and procedures governing plant quarantine following diagnosis of the plant protection services in each country. Assistance was provided during the locust incursion into the region and support given to the Ministry of Agriculture in Dominica and St Lucia for the execution of the Fruit Fly Surveys being conducted by USDA.

In Dominica, under the short term action "Validation of Sheep Production Systems" increased profitability of the cut and carry and rotational grazing systems was indicated over traditional tethering. The six (6) units which were established were used for demonstration and training in improved sheep husbandry.

The national Eradication Campaign for the eradication of *Amblyomma variegatum* was strongly supported in Dominica and since September 1987, the tick has not been detected in the quarantine area. In St Lucia, funds were also provided in support of that Country's national programme to combat the amblyomma tick. A project proposal was prepared for seeking external funds and another for establishing Video system capabilities in the Communications Unit of the Ministry of Agriculture.

During the year, IICA in the OECS was particularly concerned with the development of the Agricultural Diversification Programme in collaboration with CDB and CARDI which was presented to Heads of Government. Specialists also contributed to the development of the CARICOM Agricultural Sector Plan.

Sector Assessment Studies for Project Identification were undertaken in Antigua and St Vincent. Follow-up discussions were held after a similar study in Grenada during 1987. A study on farm incomes and praedial larceny resulted and initiatives planned to look at Irrigation.

A special training course in performance enhancement and inter-personal relationships was conducted in St Lucia for staff of the Ministry of Agriculture.

Personnel from the subregion participated in Training courses in Costa Rica and Venezuela.

This is an institutional weakness that should be addressed by the local National Agricultural Advisory Council (or its equivalent) and attended to by each Ministry of Agriculture in the sub-region.

1.2 Organisation and Management of the National Agricultural Technology Development System

In each country a National Agricultural Technology Development System (NATDS) can be identified, involving principally the national research and extension divisions of the NAA. Recent assessments indicate that institutionally the NATDS are lacking sufficient effectiveness and efficiency to meet the technological needs of the sector. As a result Government policy-makers may research and extension undertaken especially in the NAA as neither

TECHNICAL COOPERATION PROJECTS

SUPPORT FOR THE ORGANIZATION AND MANAGEMENT OF TECHNOLOGY GENERATION AND TRANSFER IN THE OECS

1. BACKGROUND AND JUSTIFICATION

This Multinational Project was approved by the IICA Board of Agriculture, through the Proposed Program Budget 1988-1989 (IICA/JIA/Doc. 136 (87) 25 June 1987). Its national components were later endorsed by the Ministry of Agriculture (MOA) in each of the five Eastern Caribbean States (ECS) involved. These are currently:

- 1) Antigua & Barbuda
- 2) Dominica
- 3) Grenada
- 4) St Lucia
- 5) St Vincent and the Grenadines

1.1 Agricultural technology policy

The Member Countries in the OECS, singly or together have not had an explicit agricultural technology policy. Basic guidelines for their agricultural sector have been promoted by the CARICOM Secretariat, but specific policies regarding technology development for the sector have not been established, either nationally or regionally.

Externally funded initiatives have tended to lead the MOA in each country to accepting particular agricultural technology development projects or activities, which do not necessarily conform to a defined long-term technology policy framework.

This is an institutional weakness that should be addressed by the local National Agricultural Advisory Council (or its equivalent) and attended to by each Ministry of Agriculture in the sub-region.

1.2 Organization and Management of the National Agricultural Technology Development System

In each country a National Agricultural Technology Development System (NATDS) can be identified, involving principally the national research and extension divisions of the MOA. Recent assessments indicate that institutionally the NATDS has lacked sufficient effectiveness and efficiency to meet the technological needs of the sector. As a result Government policy-makers see research and extension undertaken especially in the MOA as neither

sufficiently relevant to agricultural sectoral policy nor impacting on their agricultural development goals.

The major organizational and managerial changes which would contribute to improve significantly the performance of the NATDS include:

- 1) A clearly defined research/extension policy to be developed between researchers, extension workers, policy makers and technology users (mainly crop/livestock farmers);
- 2) Strong functional mechanisms for research/extension planning and priority setting, within the framework of the established national agricultural development goals and policy;
- 3) Affirmed leadership of the MOA in the functioning of the NATDS, by streamlining its organization and upgrading the managerial and technical capability of the MOA human resources, especially in research/extension, at the required levels and relevant positions;
- 4) Organized functional linkages through operational coordination and structured communication among the different institutional components involved in the NATDS, especially between the national research and extension sub-systems (NARES), marketing, planning and institutional support services, and
- 5) Active technology generation/transfer (TGT) networks to foster complementarity or broaden the scope of NARES activities, by facilitating the sharing of available human and material resources between the MOAs and other relevant national, regional and international institutions.

2. OBJECTIVES

2.1 Specific Objective

- 1) To strengthen the organization and management of NATDS and promote sub-regional collaboration in technology identification, generation/adaptation, validation and transfer.

2.2 Outputs

- 1) Technology generation and transfer system organized in each country;
- 2) TGT management capability at the national and sub-regional level improved;
- 3) Relevant technology development projects identified and formulated, and
- 4) Relevant technology generated or introduced, validated and transferred to farmers.

3. ACTIVITIES

3.1 Basic Activities

The Project's action is developed through three inter connected basic activities as follows:

- 1) Technical Support to Functional Organization and Management of NARES in the sub-region.

Based on diagnosis of the NATDS, assistance is provided to the MOA to improve its TGT functions and operations.

- 2) Technical Assistance for Projects Development and Implementation.

Support is given to the MOAs in formulating their TGT work programs and designing and implementing projects to achieve program objectives and goals.

- 3) Support for identification and transfer of appropriate technology.

Access of the ECS to relevant technology available elsewhere is facilitated and organization/development of network systems is promoted and supported by the Project.

Those basic activities were carried out intensively in St Lucia, Dominica and Grenada and were initiated in Antigua and Barbuda and St Vincent and the Grenadines.

Specific assistance to the agricultural technology development (ATD) process in the sub-region encompassed the following sequential phases:

- 1) Setting of national agricultural technology policy;
- 2) Organization and management of the technology generation and transfer system;
- 3) Formulation and implementation of technological development plan, programs and projects, for the agricultural sector, and
- 4) Identification and horizontal transfer of relevant technology to the ECS.

3.2 Activities in St Lucia

In this country where the Project had a head-start, those four (4) phases of the ATD process have advanced markedly, due principally to the establishment of a Team on Agricultural Technology (TAT) by Ministry of Agriculture of St Lucia (MOAL). The TAT basically is comprised of:

- 1) The Director in the Directorate of Agricultural Services (DAS), as chairperson;
- 2) The leader of Extension (Division Head);
- 3) The leader of Research (Division Head);
- 4) The Manager of Agricultural Stations (Division Head);
- 5) The Manager of Agricultural Stations (Division Head);
- 6) The leader of the Planning and Statistics (Unit Head), and
- 7) The leader of Marketing (Section Head in the Planning and Statistics Unit).

The TAT receives technical assistance from the Project and co-opts other technical support from within or outside the MOAL, as deemed relevant.

Through TAT, with Project's support, a National Agricultural Advisory Council (NAAC) was officially established and launched by the MOAL. Its main function focuses on assisting the Honourable Minister of Agriculture in setting policies and developing plans for the agricultural sector. It operates through four (4) Committees, including one on research/extension.

The TAT established an Agricultural Plan which covers six (6) crop and livestock development programs, within the MOAL policy framework for agricultural diversification to enhance exports and reduce imports.

The plan aims at improving productivity and profitability in the production/marketing of

- 1) Root and tuber crops
- 2) Non-traditional fruit and exotic crops
- 3) Cut-flowers and ornamental crops
- 4) Traditional tree crops
- 5) Vegetables and peanut, and
- 6) Livestock

Through a multidisciplinary and inter-institutional series of meetings organized and sponsored by the Project, the DAS prepared thirteen (13) crop or livestock-based agricultural development project profiles of which nine (9) projects have been formulated and retained for immediate implementation. These vertical and integrated commodity-based projects are:

- 1) Vegetables development (Phase 1)
- 2) Production of hot pepper for export
- 3) Yam development (Phase 1)
- 4) Sweet potato production expansion
- 5) Plantain production expansion
- 6) Increased production of ginger for export
- 7) Improvement of poultry production (egg and broilers)
- 8) Improvement of swine production and performance, and
- 9) Improvement of small ruminant production

Each project or group of related projects is coordinated by a professional designated by the MOAL. Thus, there are six (6) National Project Coordinators (NPC) grouped three (3) in crops and three (3) in livestock.

In the formulation of project profiles, the following institutions cooperated with the MOAL along with the IICA Multinational Project:

- 1) Caribbean Agricultural Research and Development Institute (CARDI)
- 2) Commonwealth Fund for Technical Cooperation (CFTC)
- 3) Caribbean Agricultural and Rural Development Advisory and Training Services (CARDATS, now incorporated into CARDI)
- 4) National Development Corporation (NDC)
- 5) French Technical Cooperation Mission (FTC)
- 6) St Lucia Exporters Association (SLEA)
- 7) St Lucia Banana Growers Association (SLBGA)
- 8) St Lucia Processors Association (SLPA)
- 9) St Lucia Marketing Board (SLMB)
- 10) St Lucia Flower Growers Association (SLFGA)
- 11) Farmers from private and quasi-government enterprises, and
- 12) Republic of China Mission (ROC)

This conjunction of institutional efforts has resulted in affirming the leadership of the MOAL in the NATDS.

To support the implementation of the programs through the development of the derived line projects, the DAS has prepared in cooperation with the Project a policy statement on Agricultural Stations management, which includes an inventory and allocation of current station physical resources. Additionally, institution-wide horizontal support programs and projects are being prepared by each DAS Division to facilitate the implementation of the integrated/vertical commodity-based projects.

In support of the sub-regional drive to boost export of non-traditional commodities, especially fruit (tree) crops, the Project's strategy calls for assisting the participating countries in identifying and getting access to outside sources of improved technology that may be relevant to their needs, objectives and agro-economic setting.

Thus, the Project in cooperation with CARDI, introduced to St Lucia from the Asian Vegetable Research and Development Centre (AVRDC), Taiwan, Republic of China state-of-the-art technology to control sweet potato weevil with sex pheromone.

Assistance was provided by the Project to the Caribbean Food Crops Society (CFCS), in improving exchange of technological information and materials within the region, through publishing the proceedings of the CFCS Annual Meeting held in St Lucia in 1986.

3.3 Activities in Grenada

With the Project's assistance seven (7) commodity-based development programs have been identified by the Ministry of Agriculture of Grenada (MOAR), for implementation.

They concentrate NATDS efforts on

- 1) Non-traditional export fruit and exotic crops
- 2) Traditional export crops
- 3) Vegetable export crops
- 4) Ground provisions (root and tuber crops) and plantain
- 5) Grain crops
- 6) Cut-flowers and foliage ornamentals, and
- 7) Livestock

From them, priority commodity-based projects will be selected and formulated along with institution-wide support programs and projects.

In support of the sub-regional drive to boost export of non-traditional commodities, especially fruit (tree) crops, the Project's strategy calls for assisting the participating countries in identifying and getting access to outside sources of improved technology that may be relevant to their needs, objectives and agro-economic setting.

Through intermediation of the Project, pawpaw seed of disease tolerant cultivars, developed by IICA with the Ministry of Agriculture of Barbados, was provided by St Lucia to Grenada.

The Project conducted for the MOAR a study for its five Agricultural Stations aiming at improving their organization and management to effectively support the country's agricultural diversification drive through the development of non-traditional crop commodities. It also collaborated in carrying out the appraisal of the agricultural sector for policy setting and project identification in Grenada.

3.4 Activities in Dominica

Jointly with the Chief Technical Officer (CTO) and Technical Officer for Extension and Projects (TO/EP), in the Division of Agriculture (DOA), of the Ministry of Agriculture of Dominica (MOAD), a draft document titled "Division of Agriculture - Plan of Work 1988-1990" was produced.

Basically it covers:

- 1) The definition of the Agricultural Sector Policy, as established in the Government's Budget Estimates 1987-1988 and other official documents and statements from the office of the Minister of Agriculture (MOAD/M);
- 2) Technical Agricultural Development Programmes for crops and livestock;
- 3) Technical and General Support Service Programmes, to back the specific crop and livestock development Programmes;
- 4) Regulatory Programmes, to enforce laws, policies, restrictions and norms or standards on the use and handling of the country's agricultural resources (especially to protect humans, crops and livestock and to conserve soil and water);
- 5) A framework of policy to guide and technical administration to facilitate, monitor and evaluate the development of the agricultural sector;
- 6) An account of current or committed external assistance, to complement or otherwise strengthen the MOAD's line Projects and institutional capability;
- 7) A strategy to implement the Plan of Work, including the functional organization of activities and operational distribution of responsibilities to streamline technical management, and
- 8) A definition and estimate of required resources (human, physical and financial) including committed and pipeline external funds, to carry out the Plan of Work, for each fiscal year.

To facilitate preparation of the document by MOAD personnel, a set of conceptual and methodological tools were produced by the IICA Multinational Project, comprising:

- 1) The grouping of basic functions of the Ministry's DOA into four broad categories (TGT Tool 88-001);
- 2) ATD policy design outline (TGT Tool 88-002), and
- 4) Basic outline of Agricultural Technology Development Programme document (TGT Tool 88-003).

Projects to implement the Plan of Work were formulated by professionals from the DOA in cooperation with resident cooperating institutions, including CARDI, UWI, IICA and other external assistance agencies. Based on the set of vertical (integrated) commodity-based projects retained, another set of horizontal (supporting) projects were developed by the DOA with the assistance of the IICA multinational Project.

The commodity-specific programmes included in the Plan comprise:

- 1) Livestock;
- 2) Non-traditional and exotic crops;
- 3) Root and tuber crops;
- 4) Vegetables;
- 5) Herbs and spices;

- 6) Traditional tree crops, and
- 7) Ornamentals.

- Institution-wide support will be provided through:
- 1) Technical services (plant protection, animal health, agricultural engineering, agroprocessing, communication and statistics, organization of farmers, and training);
 - 2) General services (store-keeping, nursery-keeping, livestock breed supply, field station management and equipment service);
 - 3) Regulatory action (plant/animal quarantine and pesticide use control), and
 - 4) Policy-making and administration.

In support of the sub-regional drive to boost export of non-traditional commodities, especially fruit (tree) crops, the Project's strategy calls for assisting the participating countries in identifying and getting access to outside sources of improved technology that may be relevant to their needs, objectives and agroeconomic setting.

Thus, with the collaboration of IICA Headquarters and the Tropical Agronomic Research and Training Center (CATIE), a technical visit to Costa Rica was arranged for two professionals from the NATDS of Dominica, financially supported by the Save Children Fund Corporation. The exchange focussed on the transfer of production/marketing technology and acquisition of 300 kg of planting material of christophene from Costa Rica by Dominica.

3.5 Activities in Antigua and Barbuda

The project has conducted a rapid diagnosis of the NATDS in Antigua, as part of an appraisal of the country's agricultural sector. The Proposed Action Plan in the ensuing report document includes a project profile on support to the organization and management of technology generation and transfer. The proposal fits into the objectives of this Project and has been endorsed by the Ministry of Agriculture of Antigua (MOAA).

3.6 Activities in St Vincent and the Grenadines

Through a rapid assessment of the agricultural sector by IICA, the Multinational Project conducted a preliminary diagnosis of the NATDS. As a result, in cooperation with the Ministry of Agriculture of St Vincent and the Grenadines (MOAV) and technical assistance from the Caribbean Agricultural Research and Development Institute (CARDI), it is preparing two (2) crop development projects: one on yam and the other on plantain. These will be funded by the MOAV with technical and financial support from external agencies.

In support of the sub-regional drive to boost export of non-traditional commodities, especially fruit (tree) crops, the Project's strategy calls for assisting the participating countries in identifying and getting access to outside sources of improved technology that may be relevant to their needs, objectives and agro-economic setting.

Thus on-request from MOAV, the Project has been engaged in identifying sources of non-traditional/exotic fruit crops, including pineapple and plantain germplasm, to be introduced into the country from Central and South America.

4. JOINT ACTIVITIES IN THE OECS

The Project assisted the Caribbean Community (CARICOM) Secretariat in formulating a Program for Agricultural Development. The resulting Regional Action Plan contains commodity-based as well as institutional support programs and investment projects which will benefit the ECS in particular.

It has also contributed technical inputs for the preparation of the OECS Agricultural Diversification Programme for joint marketing. Two project profiles on Latin American-Caribbean cooperation, which could benefit the Eastern Caribbean States were prepared by IICA's Center for Investment Projects (CEPI) in cooperation with the Project. Both deal with technical assistance for agricultural development from Latin America to the Caribbean.

Both profiles have been submitted by IICA Headquarters to the Government of Argentina, for consideration and possible funding for the implementation of the ensuing projects once fully formulated.

Similarly, this Project participated in the preparation of a Project Profile on Technology Transfer and Training in Support of Fruit Crop Development in the Eastern Caribbean, that has been submitted to the French Government for discussion and funding.

It has prepared the profiles for two multinational projects which could benefit the OECS in the Joint Plan of Action for the reactivation of the agricultural sector in the Caribbean. The first one is titled "Supporting the development of the food and vegetable crops" and the other, "Development of the institutional framework for the production and marketing of high quality planting material".

Furthermore it has cooperated with the Caribbean Agricultural Research and Development Institute (CARDI) in developing a proposal for the establishment of a Farming Systems Research/Extension Network in the Caribbean with expected participation of the Eastern Caribbean Countries.

5. PROPOSED ACTIONS FOR 1989

Within the scope of the three basic activities of the Project, the following specific tasks will be undertaken in the ECS.

- 1) Assessment/Monitoring of policy, organization and management of NATDS.
- 2) Promotion of and support for TGT policy setting and implementation.
- 3) Support for institutional adjustments to improve TGT organization and management.
- 4) Assistance to formulation of TGT programs and projects for crop/livestock production/marketing development.
- 5) Identification of relevant technology for transfer to the ECS.
- 6) Training program development for NARES professionals especially in the MOAs.

STRENGTHENING OF FARMERS ORGANIZATIONS IN THE OECS

1. BACKGROUND

The IICA project "Strengthening Farmers Organizations in the OECS" was designed based on information generated during a comprehensive diagnosis of production and marketing constraints in the four Windward Islands, executed by IICA in 1986-87. The project recognizes that farmers in the OECS countries make significant contributions to the overall economy and, being small farmers require strong organizations to provide the necessary services.

Farmers organizations within the Sub-region can be divided into two categories: traditional commodity societies (banana, spices, cocoa, coconuts) and non-traditional associations of small farmers producing an assortment of agricultural produce and a few head of small livestock. Whereas the former have been in existence for a good number of years, have large memberships, relatively good management and offer important services, the latter are of recent formation, have small memberships, and in most cases, have weak management and offer few, if any, services.

In an attempt to address the deficiencies of the non-traditional groupings of farmers, IICA, in collaboration with the respective Ministries of Agriculture in member countries,

formulated and initiated in January 1989 the four year project "Strengthening of Farmers Organizations in the OECS."

The problems which are being addressed by this project are the following:

1. A significant number of farmers organizations in the OECS are operating without legal standing;
2. Deficient services in marketing and production;
3. Scarce human and financial resources to provide capable and full-time management, and necessary infrastructure;
4. Lack of skills in organization, management, design of information systems, marketing and project identification, formulation and execution;
5. Little incentive on part of members to support their societies;
6. High risk market conditions;
7. Small volumes of production of a wide variety of crops, and
8. Lack of information on market opportunities, unreliable marketing agents and few transportation alternatives.

2. OBJECTIVES

General: Improve the managerial, production and marketing capabilities of small organized farmers.

Specific:

1. Determine the principal needs of farmers organizations in respect to the development of their organizational and managerial capabilities and their production and marketing services.
2. Assist farmers organizations in each participating country formulate a national strategy to strengthen and consolidate their management and services.
3. Assist farmers organizations in the formulation and execution of crop specific production and marketing projects.

4. Design and execute training programs to assist farmers organizations overcome specific priority development constraints.
5. Establish effective Sub-regional communication networks to meet the needs of farmers organizations for efficient production and marketing.
6. Assist in the improvement of inter-island and inter-institutional coordination to improve efficiency in the use of scarce resources.

As a strategy to strengthen farmers organizations, priority attention is given to providing the necessary resources to permit an active participation of farmers in all decision making activities. Other elements of the strategy include:

- building on organizational structures which already exist;
- involving local and regional expertise in project design and execution, and
- achieving a more effective utilization of available resources by integrating the many national, regional, international and bilateral institutions in the development process.

3. ACTIVITIES BY COUNTRY

During its first year of operation (1988) the following activities were carried out:

Antigua and Barbuda

- a) Supported Regional Extension (CAEP/FAO) Workshop on Production and Marketing Intelligence. Presented IICA data base for collection/analysis of on farm production and marketing information.
- b) Carried out analysis of farmers organizations and marketing institutional structure as part of IICA team assessment of agricultural sector.
- c) Prepared project profile for the development of production and marketing activities through the Co-operative Farmers Association.

Dominica

- a) Organized Workshop on production and marketing information systems for 25 technicians from public and private sector.

- b) Inter-island Steering Committee of Farmers Organizations institutionalized as the principal mechanism for the implementation of this project, March 7, 1988.
- c) Prepared project profile and obtained funding for the test marketing of agricultural produce from Dominica to Antigua in coordination between the Dominican Hucksters Association and the Co-operative Farmers Association.
- d) Profiles prepared or updated on most farmers organizations in Dominica.

Grenada

- a) Detailed report prepared on the livestock sub-sector in Grenada with recommendations for its development: 1989-1993.
- b) Profiles prepared or updated on most farmers organizations in Grenada.

St. Lucia

- a) Project for slaughterhouse, to be operated by STAFCOOP, was prepared and submitted by STAFCO-OP to SPIF for financing.
- b) Profiles prepared or updated on most farmers organizations in St. Lucia.
- c) Third meeting of the Inter-island Steering Committee of Farmers Organizations was hosted on December 5, 1988.
- d) Assistance was provided to the National Research and Development Foundation in the writing of radio programs on "small business."
- e) Weekly classes given to 11 agricultural students at Union on business and farm management.
- f) Project profile prepared on the agro-processing of mango for export (fresh frozen) and survey undertaken of some 100 growers of graham mangos.

St. Vincent and the Grenadines

- a) Computer program for the management of on-farm production and marketing information was developed and tested.

- b) Staff of the Organization for Rural Development were trained in the use of the data base mentioned above.
- c) Profiles prepared or updated on most farmers organizations in St. Vincent.
- d) Second meeting of the Inter-island Steering Committee of Farmers Organizations was hosted on September 13, 1988.
- e) Carried out analysis of farmers organizations and marketing institutional structure as part of IICA team assessment of agricultural sector.
- f) Prepared profile for an integrated production and marketing effort between farmers organizations and the St. Vincent Marketing Corporation.

4. JOINT ACTIVITIES

This IICA project to Strengthen Farmers Organizations in the OECS is a Multinational project presently covering five countries. Although some specific actions may be implemented in only one country, most activities have an impact upon all five of the islands. A brief summary of the principal actions of a multinational impact follows:

- a) A quarterly newspaper, "Focus on Integrated Rural Development" has been initiated and three editions were published (2,000 copies) in 1988;
- b) An Inter-island Steering Committee of Farmers Organizations has been established with representatives from both livestock and crop farmers from each island. This group meets quarterly to exchange experiences, identify priority projects, approve actions of the Secretariat and plan future actions;
- c) A one-year pilot project for inter-island joint marketing was prepared and submitted by STAFCO-OP on behalf of the Steering Committee to CIDA/Mission Administered Fund for financing. Preliminary approval has been received and financing is expected in early 1989.
- d) A computer program for the management of on-farm production and marketing information was developed and tested and the first draft of operators manuals were prepared.
- e) Professionals from this project provided technical assistance to other countries:

- Assistance was provided to Trinidad in the organization of a Seminar on Small Business Management;
- A two-week Workshop was carried out on the "commodity systems approach to problem analysis and project formulation" in Kuala Lumpur, Malaysia;
- A Seminar was given at the U. Of Idaho, Moscow, Idaho on the subject of Commodity Systems Analysis;

5. **PROPOSED ACTIONS FOR 1989**

1) Development of Action Plans

a) Diagnosis

An interdisciplinary team will evaluate the present situation in each of the selected societies to identify principal constraints.

b) Formulation

A national development plan of action to strengthen farmers organizations will be formulated.

c) Validation with farmers organizations

Once formulated, each plan of action will be presented to the respective memberships of the primary or secondary societies for discussion, modification and approval for implementation.

2) Project Formulation and Development

a) Formulation of production/marketing projects

Technical assistance will be provided from diverse sources to assist the respective farmers organizations design, formulate and evaluate production and marketing projects. Each project will be market led and will utilize a commodity systems approach to assure a comprehensive and effective solution.

b) Coordination of project implementation

Project implementation will require assistance from several sources, including Ministries of Agriculture and national, regional and international organizations. The project will facilitate the

coordination and integration of the technical and financial resources from the diverse sources.

3) Training and Technical Assistance

a) Execution of training program

Training programs will be designed and executed for both the leadership of primary and secondary societies and farmers.

b) Supply of specialized technical assistance

Technical assistance will be utilized to undertake studies in priority areas to identify problems impacting upon primary and secondary cooperative societies and alternative solutions.

4) Development of Co-operative Marketing Capabilities

a) Strengthening of organizational structure

Primary and secondary farmers organizations will be assisted to design and undertake marketing strategies.

b) Development of operational capacity

Assistance will be provided to farmers organizations to obtain marketing managers to coordinate the marketing of produce between participating farmers organizations, e.g Productive Farmers Union in Grenada exporting to Barbados Agricultural Society.

c) Identification of extra-regional potential

Market opportunity studies will be conducted in USA and Canada. These studies will be undertaken with support of co-operative societies in the United States and Canada.

STRENGTHENING PLANT PROTECTION AND QUARANTINE CAPABILITIES IN THE WINDWARD ISLANDS AND ANTIGUA AND BARBUDA FOR THE MARKETING OF NON-TRADITIONAL CROPS

1. **BACKGROUND**

The Governments of the Organization of Eastern Caribbean States (OECS) - Antigua and Barbuda, Dominica, Grenada, St Lucia and St Vincent and the Grenadines have identified agricultural diversification as a national policy for development. They have

been promoting and developing the production of non-traditional crops - mangoes, breadfruit, passion fruit etc. within their overall diversification thrust for export enhancement and import substitution. However, these crops are being produced in small quantities and large numbers are proving unsuitable for export due to unacceptable and variable quality.

In some countries a number of the current pests have been introduced. In addition, the countries are exposed to the danger of introduction of many other serious pests.

Thus, a project was developed which was designed to address the plant protection and quarantine problems of these non-traditional crops.

2. OBJECTIVES

General: To increase the quantity of quality non-traditional crops suitable for export from the Windward Islands and Antigua.

Specific: To strengthen the capability of the countries to reduce the plant protection and plant quarantine constraints to production and marketing of non-traditional crops.

The project was approved in mid 1988 and the following activities were implemented in the countries.

Antigua and Barbuda

A diagnosis of the plant protection system was made and areas for action identified, documented and submitted to the MOA.

The Plant Protection Officer for Antigua attended the meeting to discuss a plant quarantine system for the OECS which was held in Trinidad.

Dominica

During the period in review, a minimum of forty-eight (48) persons were trained in various aspects of plant protection (Table 4). A one day seminar on crop protection practices in propagation nurseries for government agricultural station propagators and extension officers was held. In service training was provided to Plant Quarantine inspectors, on plant quarantine procedures at the ports of entry. Plant protection operations were monitored.

Supported the Ministry of Agriculture in a seminar in Plant Propagation and Nursery Management for propagators, extension officers and farmers and assisted it with the implementation of the fruit fly project, Rodent Control Programme, Coconut Pests and Disease Monitoring Survey and a Citrus Spray Programme. Field visits were made to Government Agricultural Stations and other farms to provide crop protection advice and to diagnose pest and disease problems.

The project printed one hundred and fifty (150) copies each of two booklets - "Sorrel Production in Dominica" and "Passion Fruit Production in Dominica" and accessed information on mango and avocado and other fruits and vegetables.

Collected information on pests and diseases of crops for inclusion into a data base for development of a plant health Information System.

The Plant Protection Officer for Dominica attended the meeting to discuss a plant quarantine system for the OECS which was held in Trinidad.

Grenada

During the year, a minimum of one hundred (100) persons received training in various aspects of plant protection (Table 3). Two (2) workshops to discuss pest and disease problems and pruning in mangoes for pest and disease control were held and leaflets on "Improve Mango Quality, Prune Now" and on "Management of Wet Wood Termites" were distributed. Farm visits were made to diagnose pest and disease problems and advise on control measures.

The training of an officer of the Pest Management Unit in Trinidad was facilitated through the project.

A visit was made to the main propagation station and problems discussed with the Officer in charge. A workshop was held to discuss identification of problems and control measures to use. In addition, a workshop on use of small volume application equipment was implemented for the workers and pruners/sprayers.

An information package for the management of Anthracnose in mango is being developed.

The Pest Management Officer attended the meeting to discuss a plant quarantine system for the OECS which was held in Trinidad.

St Lucia

During the period under review a minimum three hundred and sixty persons (360) were trained in various aspects of plant protection (Table 3). A workshop to discuss pest and disease problems and pruning in mango and cocoa was held. Farm visits were made to diagnose pest and disease problems and advise on control measures. On the farm training sessions were held for farmers and field personnel.

The project continued to assist the Pesticide Control Board in its effort to educate the public on and regulate the use of pesticides in the country. Thus, a chart for emergency treatment for acute poisoning by pesticides was distributed to Hospitals and Health Centres. Secondary School Students were trained in pesticide safety and a one day seminar to discuss guidelines in pesticide usage was conducted. Plant propagation and farm workers benefitted from workshops on small volume application equipment and pesticide safety.

An information package for the management of Erwinia in pawpaw was developed following the heavy losses experienced during the validation experiments in that crop. Also, a bibliography on the problem has been developed for the Plant Protection Unit whilst an article on the subject was published in the rural development newspaper, FOCUS.

Assistance was given for the establishment of two (2) experiments to evaluate sweet potato weevil and one (1) for Diamond Back moth in cabbage. Information on the sweet potato weevil (Eucepes sp.) and the ginger borer (Palaceopus sp) was obtained and sent to the Plant Protection Unit.

A diagnosis of the problems in the post harvest system of mango, avocado, soursop and breadfruit was made and a leaflet entitled "Improve Fruit Quality, Prune Now" was distributed. A Manual on Small Volume Application Equipment was printed and distributed to field personnel.

One officer of the Plant Protection Unit participated in the meeting of Directors of Plant Protection of the OECS to discuss a plant quarantine system whilst the project assisted in the monitoring and control of the incursion of Desert locusts.

St Vincent and the Grenadines

During the period, a minimum of 75 persons received training in various aspects of plant protection (Table 2). Three (3) workshops to discuss pest and disease problems and pruning in mangoes for pest and disease control were held and a leaflet on "Improve Mango Quality, Prune Now" was distributed. Farm visits

were made to diagnose pest and disease problems and advise on control measures.

Plant Protection Personnel were accompanied on visits to the four (4) plant propagation stations where plant protection problems were discussed.

A diagnosis of the plant protection system was made and areas for action were identified and participated in activities to combat the incursion of desert locusts.

The Plant Protection Officer participate in a meeting to discuss a plant quarantine system for the OECS held in Trinidad.

Facilitated the provision of visual aids for the Plant Protection Unit in the training of Customs and Revenue Officers in Plant Quarantine.

All Countries

Multinational Animal and Plant Protection Project
Project: Animal Health and Plant Protection Information and Data Monitoring System for the Caribbean

Plant Protection Officers attended a meeting held in Trinidad to discuss the activities of the above named project. A meeting was also convened to discuss the problems associated with the African Locust incursion into the Caribbean.

Assistance was given through IICA's emergency funds to support national efforts in the fight against the locust incursion.

Project coordinator visited to discuss countries' participation in the project.

Table 1: Training Activities held during 1989

Pest and disease problems and pruning cocoa and mango	December	31 farmers and field officers	Farmers and field officers trained
Pesticide Safety	September November	300 Secondary Schools Students in the South of the Island	Students trained in pesticide safety
Small holder agriculture equipment and pesticide safety	May	30 plant propagation and farm workers	Plant Propagation and farm workers trained

DOMINICA

Table 1: Training Seminars held during 1988

NAME OF EVENT	DATE	NO. OF PARTICIPANTS	RESULTS OBTAINED
Seminar on Crop Protection Practices in the Nursery.	June	19 Station Propagators and Extension Officers	Officers trained
In service training in Plant Quarantine	Ongoing	2 Plant Quarantine Officers	Plant Quarantine Officers trained
Seminar in Plant propagation and Nursery Management.	October	27 Propagators, Extension Officers and farmers	Officers and farmers trained

GRENADA

Table 2: Training Seminars held during 1988

Pruning of mangoes for pest and disease control	December	40 persons	Extension officers trained
Training in Laboratory techniques	September	1 Officer of the Pest Management Unit	Laboratory Technician trained
Pesticide Safety use of small volume application equipment, diagnosis of problems in Nursery.	August	60 Pruners/sprayers and propagation	Pruners and propagation workers

ST LUCIA

Table 3: Training Seminars held during 1988

Pest and disease problems and pruning cocoa and mango	December	33 farmers and field officers	Farmers and field officers trained
Pesticide Safety	September November	300 Secondary Schools Students in the South of the island	Students trained in pesticide safety
Small Volume application equipment and pesticide safety	May	30 plant propagation and farm workers	Plant Propagation and farm workers trained

ST VINCENT

Table 4: Training Seminars held during 1988

Pruning of Mangoes for pest and disease control	November	64 farmers and field officers	Farmers and field officers trained
Training in Plant Quarantine	October	11 Customs Revenue officers and field officers of the Ministry of Agriculture	Customs, Revenue and field officers trained in Plant Quarantine

The Programme was submitted to the meeting of the OECS Authority held at St Vincent in May 1988 and subsequently reviewed through meetings with Ministry officials and Technocrats. The documented programme included an annex volume on specific commodities.

The programme included a short term plan and a medium to long term plan which avoids undue strain on existing resources but emphasizes building upon initiatives already underway which should yield early financial gains. The three components of the programme are PROMOTION, for the promotion of specific crops to meet market demand; SUPPORTIVE, for the necessary infrastructure and facilitation of inputs through organisation of farmers, and COORDINATION AND MONITORING for implementation through an institutional framework within the OECS Secretariat.

The specific commodities extensively produced and traded are Breadfruit, mango, pineapple, hot pepper, sweet potato while those with great potential are pineapple, banana, taro, papaya and passion fruit.

Other policy recommendations were provided to facilitate joint marketing and to identify the roles of the various regional agencies and institutions.

The details of the programme were detailed and incorporated wherever already available in the sub-region through the OECS, CARICOM and ECOCOM secretariats. Financing was estimated at 11.2 million dollars.

SHORT TERM ACTIVITIES

OECS DIVERSIFICATION PROGRAMME

Following a meeting of Heads of Government held in St Lucia in March 1988, the OECS Secretariat mandated the CDB in collaboration with CARDI and IICA to prepare a programme for agricultural diversification based on prioritized crops for increased foreign exchange earnings.

IICA's team was led by Gonzalo Estefanell, Coordinator of the Project Unit with technical support from Rafael Marte - Fruit Tree Crop Specialist and Jerry La Gra - Rural Development and Marketing Specialist.

The Programme was submitted to the meeting of the OECS authority held in St Vincent in May 1988 and subsequently reviewed through meetings with Ministry officials and Technocrats. The documented programme included an annexed volume on specific commodities.

The programme includes a short term plan and a medium to long term plan which avoids undue strain on existing resources but emphasizes building upon initiatives already underway which should yield early financial gains. The three components of the programme are PRODUCTIVE, for the promotion of specific crops to meet market demands, SUPPORTIVE, for the necessary infrastructure and facilitation of inputs through organization of farmers, and COORDINATING AND MONITORING for implementation through an institutional framework within the OECS Secretariat.

The specific commodities extensively produced and traded are breadfruit, mango, plantain, hot pepper, sweet potato while those with good potential are pineapple, soursop, carambola, pawpaw and passion fruit.

Sector Policy recommendations were provided to facilitate joint marketing and to identify the roles of the various regional agencies and institutions.

The costs of the Programme were detailed and incorporated resources already available to the sub-region through the EEC, USAID, CIDA and BDD. Additional financing was estimated at 11.462 US million dollars.

AGRICULTURAL SECTOR ASSESSMENT FOR PROJECT IDENTIFICATION ANTIGUA AND BARBUDA AND ST VINCENT AND THE GRENADINES

After Antigua and Barbuda and St Vincent and the Grenadines were ratified as members of IICA at the meeting of the Inter-American Board of Agriculture held in Ottawa, Canada in September 1987, the Director of Area Operations, Cassio Luiselli and Area Director for the Caribbean, Reginald Pierre, held discussions in Antigua with the Minister of Agriculture, Lands and Housing, Hon Hilroy Humphries and the Permanent Secretary, Mr Ernest Benjamin and in St Vincent and the Grenadines with the Minister of Trade Industry and Agriculture, Hon Marcus de Freitas and the Permanent Secretary, Mr Randolph Cato.

It was agreed that an assessment of the agricultural sector would be undertaken by a multidisciplinary team from IICA in collaboration with officials, professionals and technicians available to the Ministry of Agriculture. Apart from providing a documented composition of agriculture in the islands it would evaluate the impact of policies and agricultural programmes, update on the status of the sector and point to options for future development. A similar undertaking had been completed in Grenada in 1987, documented and follow-up discussions were pursued.

National consultants in agricultural planning were engaged to provide macroeconomic data in support of these activities according to guidelines provided by the Coordinator of the Project Unit located in Barbados who was assigned responsibility for the activities.

The technical teams visited Antigua and St Vincent for periods of two weeks and were composed of the following personnel:

- Dowlath Budhram - Policy Analysis Specialist (Barbados Office)
 - Gonzalo Estefanell - Coordinator, Agricultural Economist
 - Jerry La Gra - Rural Development and Marketing Specialist
 - Cosmos Joseph - Agronomist
 - Rafael Marte - Fruit Tree Crop Specialist
 - Hector Munoz - Livestock Production Specialist (Guyana Office)
 - Antonio M Pinchinat - Technology Generation and Transfer Specialist
- In St Vincent,
Rafael Salazar - Marketing Specialist (Trinidad Office) also participated.

The teams were also assisted by Peace Corps Volunteer -Whitney Bower and Sandra Best from the IICA Barbados Office.

In Antigua, the exercise was conducted with invaluable assistance from the Permanent Secretary - Ernest Benjamin, Director of Agriculture - Francis Henry and various personnel in the Ministry of Agriculture, other agencies and the farming community. Particular assistance was provided by Dr Joseph Campbell of the OAS and Dr Brian Cooper of CARDI. Office support was generously given by Mr Timothy Prime, Director of the OAS Office in Antigua.

In St Vincent, the Ministry's collaboration was headed by the Permanent Secretary, Mr Randolph Cato, with Lennox Daisley, Chief Technical Officer and Ashley Cain, Extension Officer who also acted as chief liaison. Heads of Divisions, Marketing, Plant Protection and Veterinary Services were particularly helpful as were Mr Attlee Brathwaite, FAO advisor on planning and representatives of various agencies, CARDI and the Chinese and French Missions. Mr Eustace Gulston, Director of the OAS Office, not only placed his office and staff in support of the Mission but contributed significantly to particular areas of interest.

As in the case with most Caribbean countries, the islands have been studied extensively, but most of those studies only take a partial view, generally reflecting the needs of funding agencies for identifying investment areas within their priorities. The documents will draw on most of the recent studies, attempting to put their findings within a long term perspective.

It should be pointed out that two areas that commonly are within the agricultural sector were not included in the studies, forestry and fisheries, mainly because they are presently outside the realm of IICA.

The outcome of the exercises is a series of recommendations at the institutional and policy levels and a series of projects. All of them, once prioritized need to be developed.

VALIDATION OF SHEEP PRODUCTION SYSTEMS

The six (6) model sheep rearing units which were previously established, were monitored on a weekly basis. Information was collected utilising ten (10) data collection forms developed with Ministry of Agriculture's and CARDI's assistance. Two control farms within the project area were also included. Meeting farmers on banana days and weighing lambs were identified as constraints. These farms are used by the Ministry of Agriculture as training and demonstration centres and the technology has been adopted by other farmers.

Information was provided to CARDI Trinidad for input data in support of development of a regional project for the Eastern Caribbean.

A problem arose with Tanner grass dying back on one farm. CARDI's pathologist investigated and analyses were arranged using WINBAN's laboratory resources in St Lucia. Unfortunately lack of reagents has delayed test results.

Information generated demonstrates conclusively that farmers are very capable of mastering the use of improved methods of sheep raising and successfully using these methods in their individual livestock operations. Farmers demonstrated good ability to use improved methods of sheep raising to generate income for themselves and their families and to increase the size of their flocks.

Taken together, results show that the cut and carry system and the rotational grazing system are more profitable than the traditional method of sheep raising. The cut and carry system was, however, found to have definite advantages over the rotational grazing system. Exposure and attacks by dogs accounted for all deaths to animals raised using the rotational grazing system and the traditional method of sheep rearing. Death due to these causes was eliminated by confinement in pens in the cut and carry system. These results show that confinement eliminates the major causes of sheep deaths and greatly increases the profitability of a sheep rearing operation. Elimination of deaths through confinement of animals was achieved without significant increases in time or in expenditures for feed and medication.

Some inconsistent results show the importance of individual husbandry practices of the farmers. These inconsistencies demonstrate the importance of continued observation and supervision of livestock operations by technical personnel and the provision of educational services to farmers on a continual basis.

INTERIM MANAGEMENT OF AMBLYOMMA VARIEGATUM

DOMINICA

Support to the Ministry of Agriculture's tick *Amblyomma variegatum* eradication project in the Woodford Hill area continued. IICA monitors and supervises activities on a regular weekly basis. Funds were made available through Programme V which provided supplies of the acaricide, Bayticol and permitted some personnel wages during November. The Ministry was forced to reduce the number of workers from six (6) to four (4) but has consistently lived up to its obligations in support of the project which is top priority for the livestock sector.

During the year, a corral for the treatment of 250 head of feral cattle was built by the farmers with the assistance of the veterinary PCV Dr Sivam Sangarasivam and Marie Charles, IICA's livestock consultant. The government provided funds, equivalent of US\$1500 for materials. The corral and chute have been utilized and the animals inspected and treated on a regular basis.

The Project has been successful and the tick was last identified in September 1987. In fact, the farmers report that they can no longer find any ticks in the area. A total of 1340 cattle, 819 goats, 722 sheep and 977 dogs are involved. IICA's total commitment to the project has so far amounted to US\$40,000 with US\$20,000 from the Ministry of Agriculture.

There is need for the project to continue for at least another year to ensure success and adequate surveillance.

ST LUCIA

The Office provided the Ministry of Agriculture with assistance in the preparation of a project proposal for submission to donor agencies in support of the national campaign for the control of *A.variegatum*.

The Program V Directorate of IICA provided funds which contributed to the purchase of supplies of the acaricide - BAYTICOL and its use by animal health personnel in the field.

A presentation - *Amblyomma variegatum* in the Eastern Caribbean was made at the XVI Biennial Caribbean Veterinary Convention 1988, held in Guyana. The presentation received report inputs from Veterinary Officers of all countries of the OECS.

IMPROVED MANAGEMENT AND INTERPERSONAL RELATIONSHIPS - (St Lucia)

A request from the Minister of Agriculture in St Lucia was received for improvement in Management and inter-personal relationships.

Dr Rudi Webster, a physician and consultant on Performance Enhancement assigned to the Government of Barbados was contracted to assess the situation and design a training course to improve attitudes and performance within the public sector.

The consultant met separately with three levels of the Ministry's hierarchy including the heads of Divisions and Technical Services. A series of lectures for five days over a period of three weeks was arranged for the various levels of personnel in the Ministry of Agriculture, Lands, Fisheries, Forestry and

Cooperatives. A total of about seventy-five (75) persons participated. The consultant held a special debriefing session with the Minister of Agriculture to provide an evaluation and recommendations for follow-up and monitoring. From all reports, the sessions were considered extremely valuable and participants have begun the serious process of introspection.

A PILOT STUDY OF FARM INCOMES

The agricultural sector assessment study conducted in Grenada during 1987 identified the need to clarify the level of farm incomes and praedial larceny to assess their present impact in the country. The study was undertaken through a local IICA Consultant Ms Cecilia Quashie, during a six week period (mid October to end of November) Ms Quashie report has been submitted to the Ministry of Agriculture and is receiving due attention. The study will be documented under IICA's Miscellaneous Publication Series.

TRAINING PARTICIPATION

An IICA sponsored workshop on "Preparation of Educational Radio Programmes and Printed Materials to Foster Rural Development in the Caribbean" was held at the Institute's Headquarters in San Jose and lasted three weeks (April 25 - May 14). It was made possible through a signed agreement between IICA and the Government of the Netherlands.

Participants from the OECS included:

Duncan Stowe	-	Communications Unit/MOA - Dominica
Denise Peters	-	MOA's Information Unit - Grenada
Claude Brown	-	CARDATS - Grenada
Lena Bahtou	-	MOA's Information Unit - St Lucia
Conrad Sayers	-	Communications Unit/St Vincent

Through an IICA initiative, supported by the OAS and the Centro Interamericano de Idiomas de Caracas, a two months Spanish training Programme was carried out in Venezuela during the period July to September. The programme aimed at increasing the Spanish language capability of the participants.

The following technicians participated:

Sherma D'Arbeau	-	Grenada
Daniel Alexander	-	Grenada
Leroy Peters	-	Grenada
Alfred Emmanuel	-	St Lucia
Claudia White	-	St Vincent and the Grenadines

PROJECT UNIT

The Project Unit continued its strong contribution to member countries through - preparation of the OECS Diversification Programme in collaboration with CDB and CARDI; - Execution of Sector Assessment for Project Identification in Antigua and Barbuda, St Vincent and the Grenadines; and - Follow-up of recommendations made under a similar study for Grenada in 1987.

Arrangements were concluded for the visit of a Soil and Water Management Specialist to prepare a preliminary report dealing with IRRIGATION in Grenada and St Vincent.

Two consultants were used to prepare inputs for the publication of a manual on "the Agricultural Census" based on the successful experience enjoyed in St Lucia.

REGIONAL PROJECTS

Caribbean Animal and Plant Health Information Network CARAPHIN.

This Regional Project has its headquarters in IICA's Trinidad and Tobago Office and was initiated in 1988 under the responsibility of Dr Barry Stemshorn.

A seminar/workshop was conducted in Trinidad with Caribbean Animal Health and Plant Protection Officials in November and agreement reached on the design and strategy of the Project. The meeting was attended by IICA's Program V Directors, Representatives of regional agencies and of North Carolina State University - USA. Recommendations were formulated and priority areas of concern were determined for both Animal and Plant Health Services.

Subsequently, visits were completed to all member states and discussions held with Ministry Officials and Chief Animal and Plant Health Officers.

Strong support was provided to member countries of the OECS during the recent incursion of locusts. Information was disseminated and activities monitored for distribution of the IICA Emergency Funds provided by the Director General. A special workshop was arranged in collaboration with FAO for Plant Protection Officers which was held in Trinidad on November 16, 1988.

STAFF

- Reginald E Pierre - Area Director for the Caribbean
Franz C M Alexander - Representative Antigua & Barbuda
Dominica/Grenada/St Lucia/St Vincent
and the Grenadines
Jerry La Gra - Rural Development and Marketing Specialist
Antonio M Pinchinat - Technology Generation and Transfer
Specialist

ST LUCIA

- Everton Ambrose - National Plant Protection Specialist
Susan Oechsle - Peace Corps Volunteer
Bernitha Clery - Administrative Technician
Brian Gittens - Accounting/Research Assistant
Lenita Weekes - Assistant Executive Secretary
Firmus Popo - Messenger/Driver/Machine Operator
Josephine Charles - Office Attendant

DOMINICA

- Urban Martin - National Plant Protection Specialist and
Office Coordinator
Maureen Dominique - Assistant Executive Secretary
Barry Borland - Peace Corps Volunteer

GRENADA

- Cosmos Joseph - Agronomist and Office Coordinator
Merril St John - Administrative Technician
Emery Thorne - Driver/Messenger
Agnes Williams - Office Attendant

MULTINATIONAL PROJECTS

Programme I

- Gonzalo Estefanell - Agricultural Economist - Barbados Office
Dowlat Budhram - Policy Analysis Specialist - Barbados
Office

Programme II

- Rafael Marte - Fruit Tree Crop Specialist - Barbados
Office

Programme V

- Barry Stemshorn - Regional Veterinary Specialist - Trinidad &
Tobago Office

EXPENDITURE

The following were the expenditures of the IICA Offices in the OECS during the period:

ADMINISTRATIVE COSTS

QUOTA	US\$249,993	
TOTAL		US\$249,993

TECHNOLOGY GENERATION AND TRANSFER PROJECT

QUOTA	US\$144,074	
TOTAL		US\$144,074

STRENGTHENING FARMERS ORGANIZATIONS

QUOTA	US\$151,748	
TOTAL		US\$151,748

PLANT PROTECTION PROJECT

QUOTA	US\$88,951	
TOTAL		US\$88,951

VALIDATION OF SHEEP PRODUCTION SYSTEMS

QUOTA	US\$9,865	
TOTAL		US\$9,865

INTERIM MANAGEMENT OF AMBLYOMMA VARIEGATUM

QUOTA	US\$3,962	
TOTAL		US\$3,962

SECTOR ASSESSMENT STUDIES

QUOTA	US\$53,219	
TOTAL		US\$53,219

TOTAL EXPENDITURE		<u>US\$701,812</u>
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