

# IICA



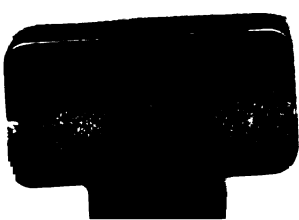
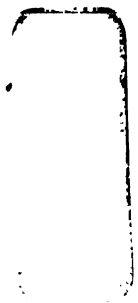
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IICA - CIDA

ANNUAL REPORT  
TO THE  
GOVERNMENT OF 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.

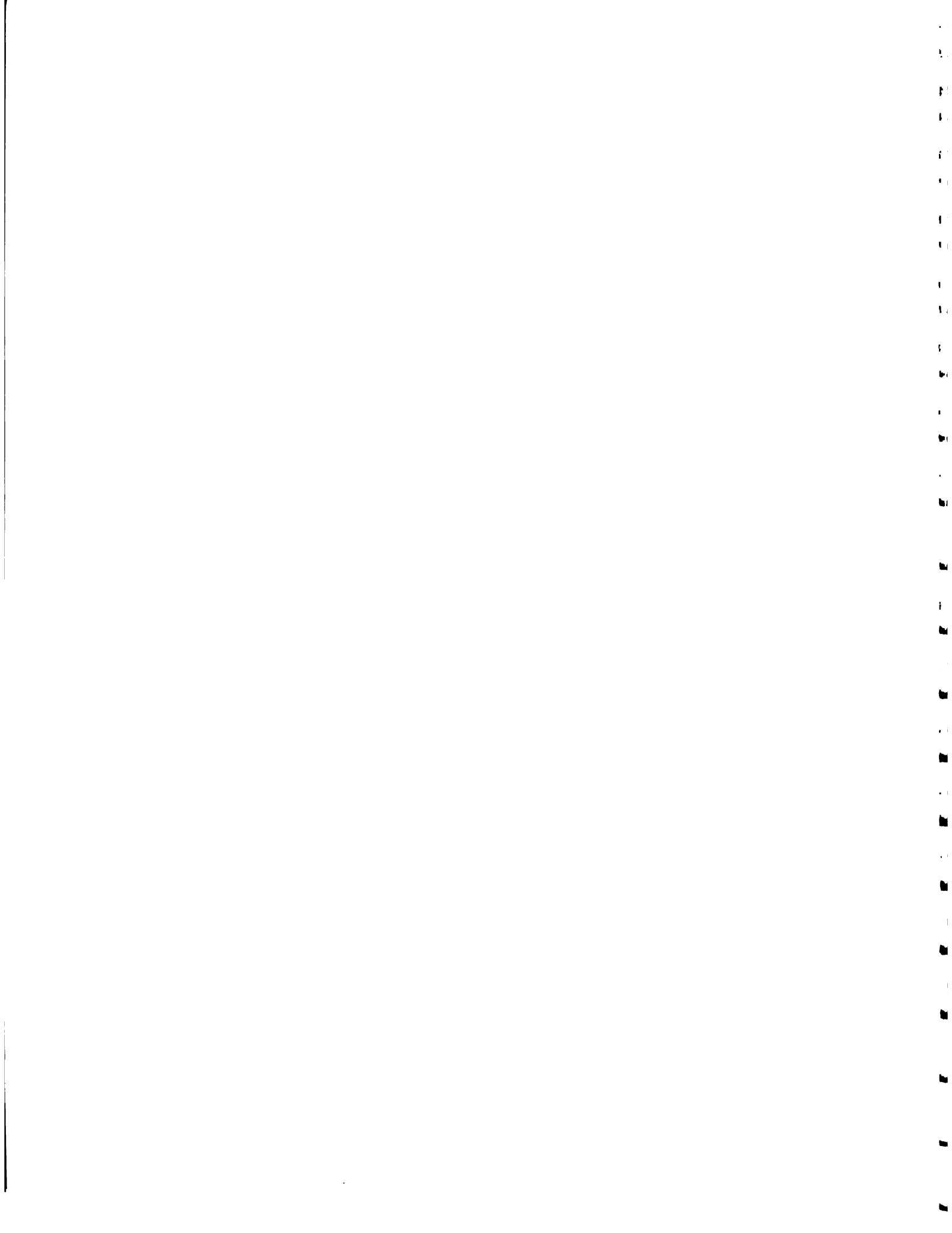
The contributions of the Member States, as well as through relations IICA maintains with 12 Permanent Observer Countries and numerous international organizations, allow the Institute to channel significant human and financial resources toward the agricultural development of the hemisphere. IICA's Permanent 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 was approved by the IABA at its meeting in Costa Rica, October, 1989.

PLANLAC has been incorporated into the Institute's activities, in cooperation with the countries and 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.

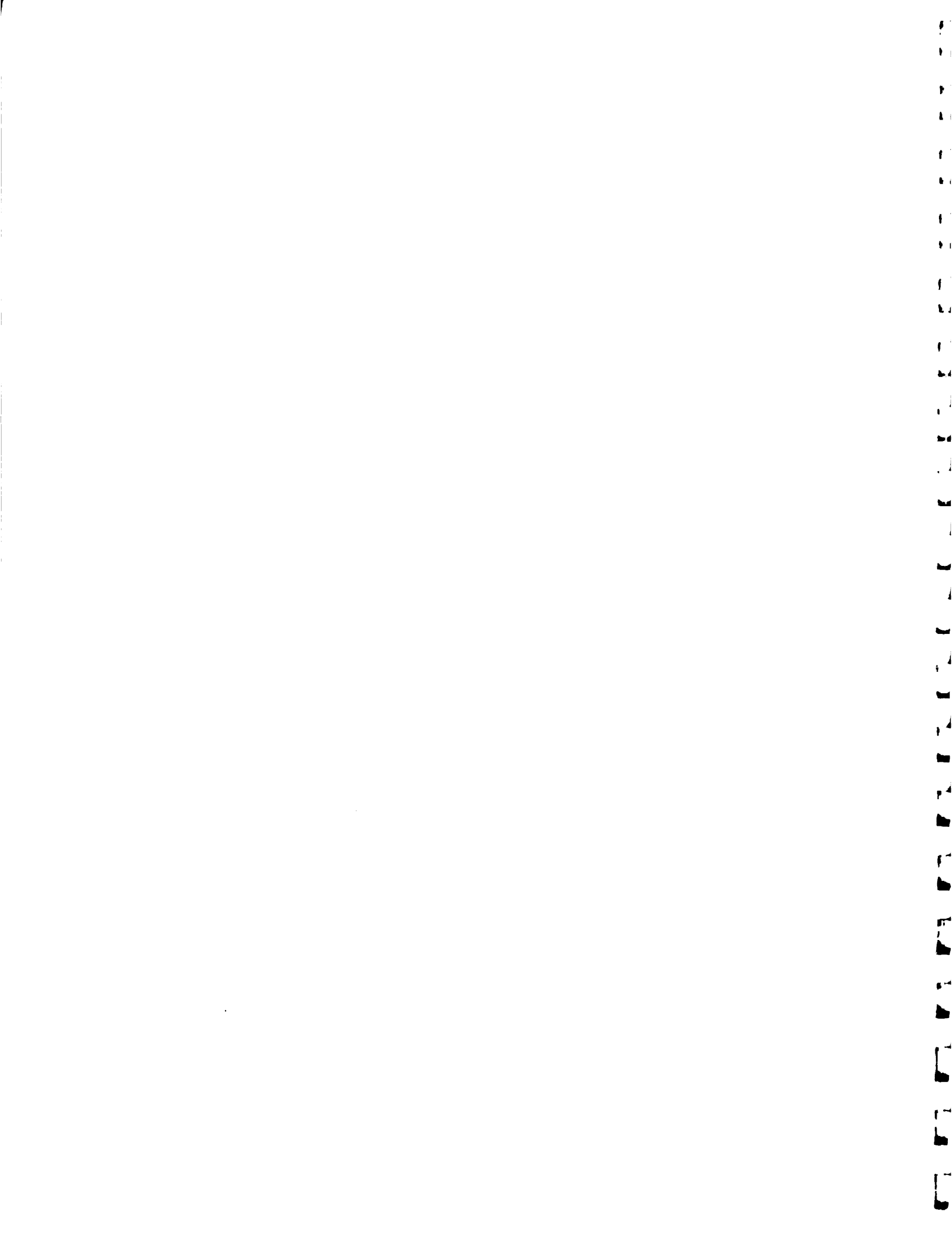
#### IV Marketing and Agro-industry

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 (CEPPI) for agricultural pre-investment and a special Project Unit for the Caribbean area located in Barbados with similar purpose.

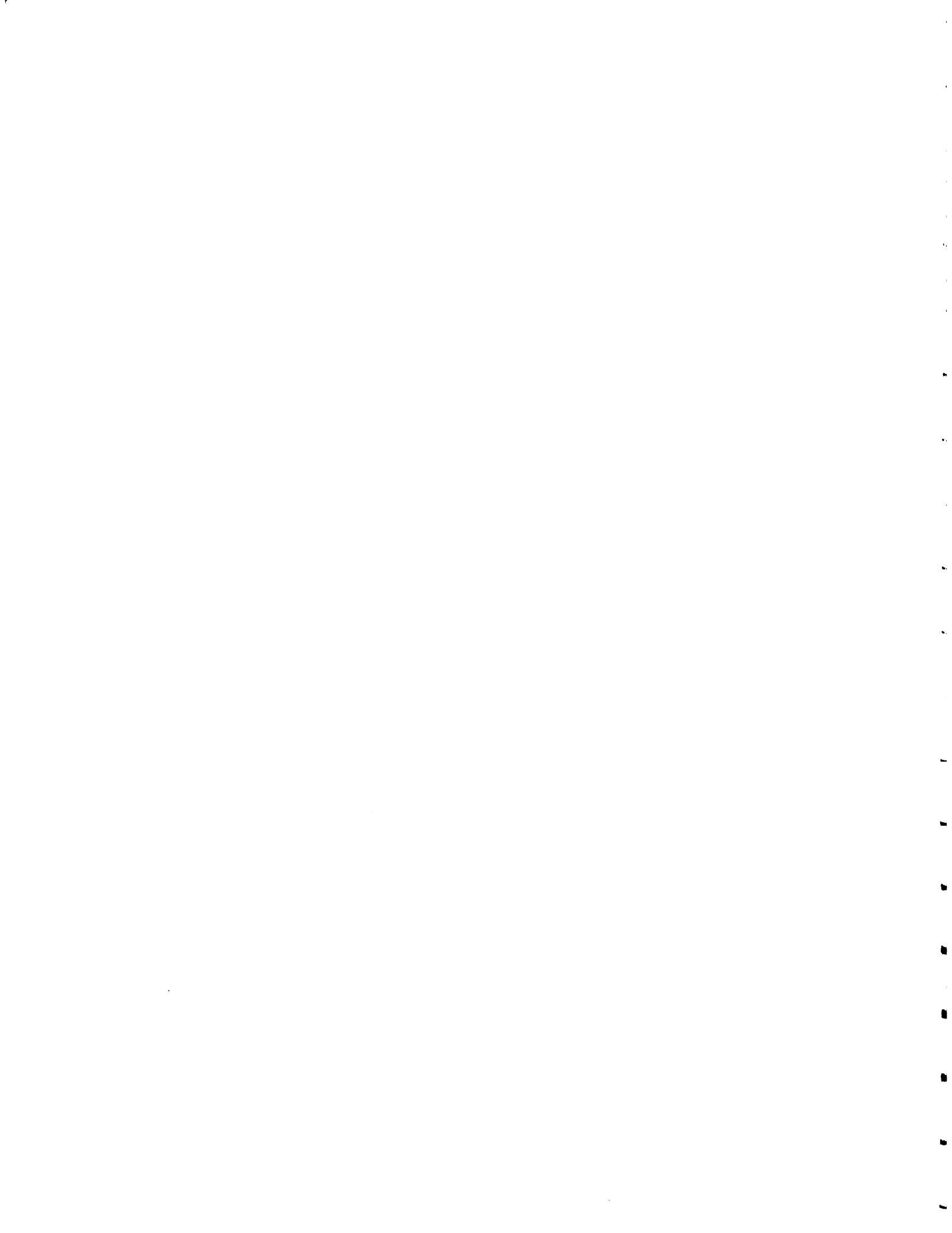
The Inter-American Agricultural Documentation and Information Centre (CIDIA) offers services related to subject areas selected for action by the Institute's programs.

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 Farmers Organization 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).



## 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 and relocation to the Villa, St George's should be completed in 1990.

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 was 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.

David Fletcher - Agricultural Economist undertook responsibility for the project "Institutional Strengthening of the Marketing Subsector in Grenada" from 1980 to 1982.

Two national professionals were engaged in project activities-

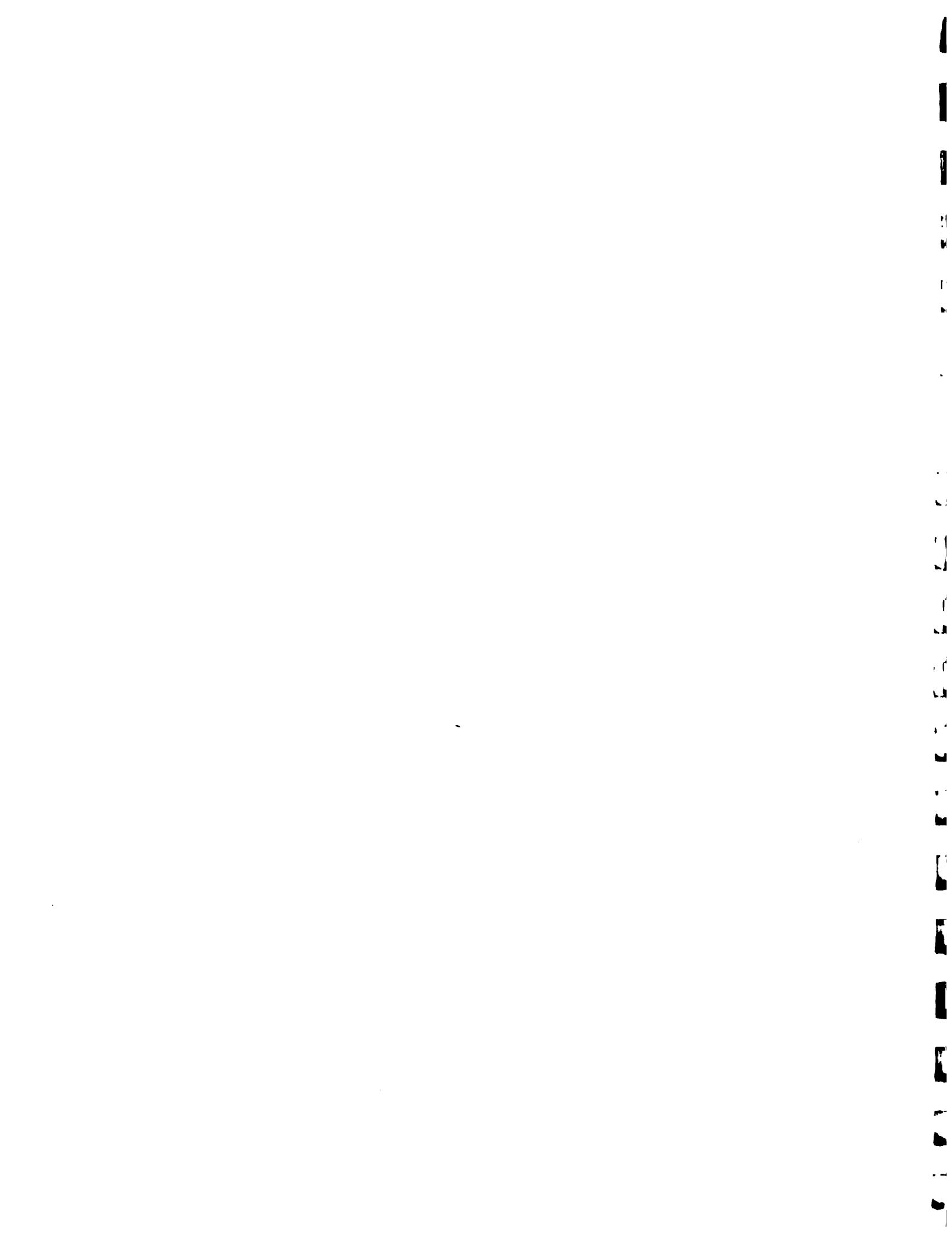
Plant Protection - Cyril Dominique - from 1984 - 1987

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.

During 1989 Peace Corps Volunteer, Allan Martinson was assigned duties in support of the Fruit Tree Crop Project under the responsibility of Dr Rafael Marte from the Barbados Office.

Another Peace Corps Volunteer, Mrs Cheri Mathews was assigned duties under the Marketing and Rural Development Specialist but resigned before the end of 1989.



## 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 Kingston, Jamaica, October 1983 and attended by Grenada, Dominica, St Lucia and St Vincent and the Grenadines from the sub-region. These Countries also attended the 3rd Regular Meeting of the IABA held in Motevideo 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.

The Fifth Regular Meeting of the IABA was held in Costa Rica in October 1989 and attended by all member states of the OECS. This meeting approved the reelection of the Director General, Dr Martin Pineiro by acclamation and ratified the PLANLAC which was prepared following the Mandate of Ottawa and incorporated into IICA's activities in cooperation with member countries.

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 also in 1989.

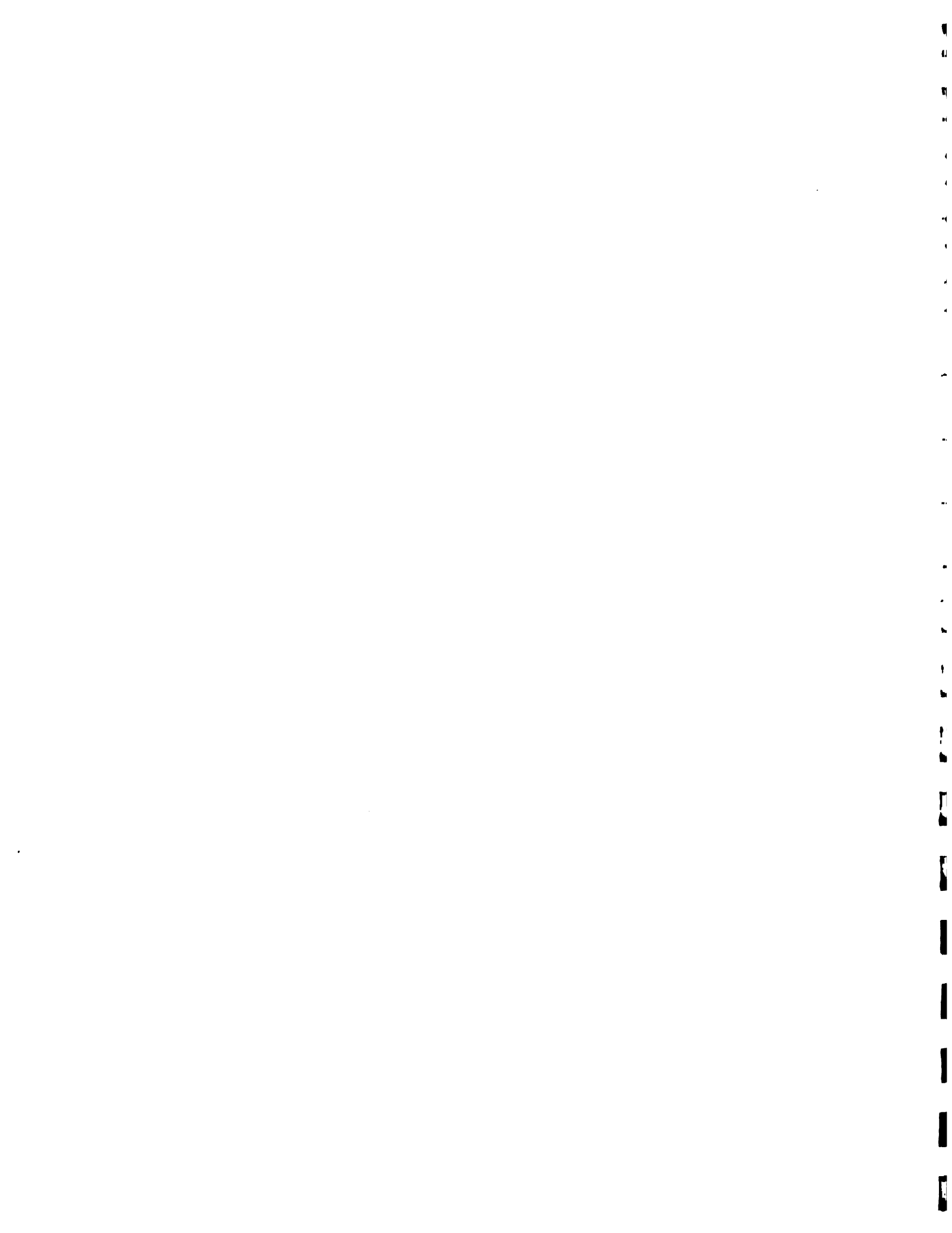
### Technical Cooperation Actions have included:

- A Caribbean Workshop on Traditional and Non-traditional Fruit Tree Crop Development - November 1980
- Institutional Strengthening of the Agricultural Marketing Subsector - 1980-1982
- 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

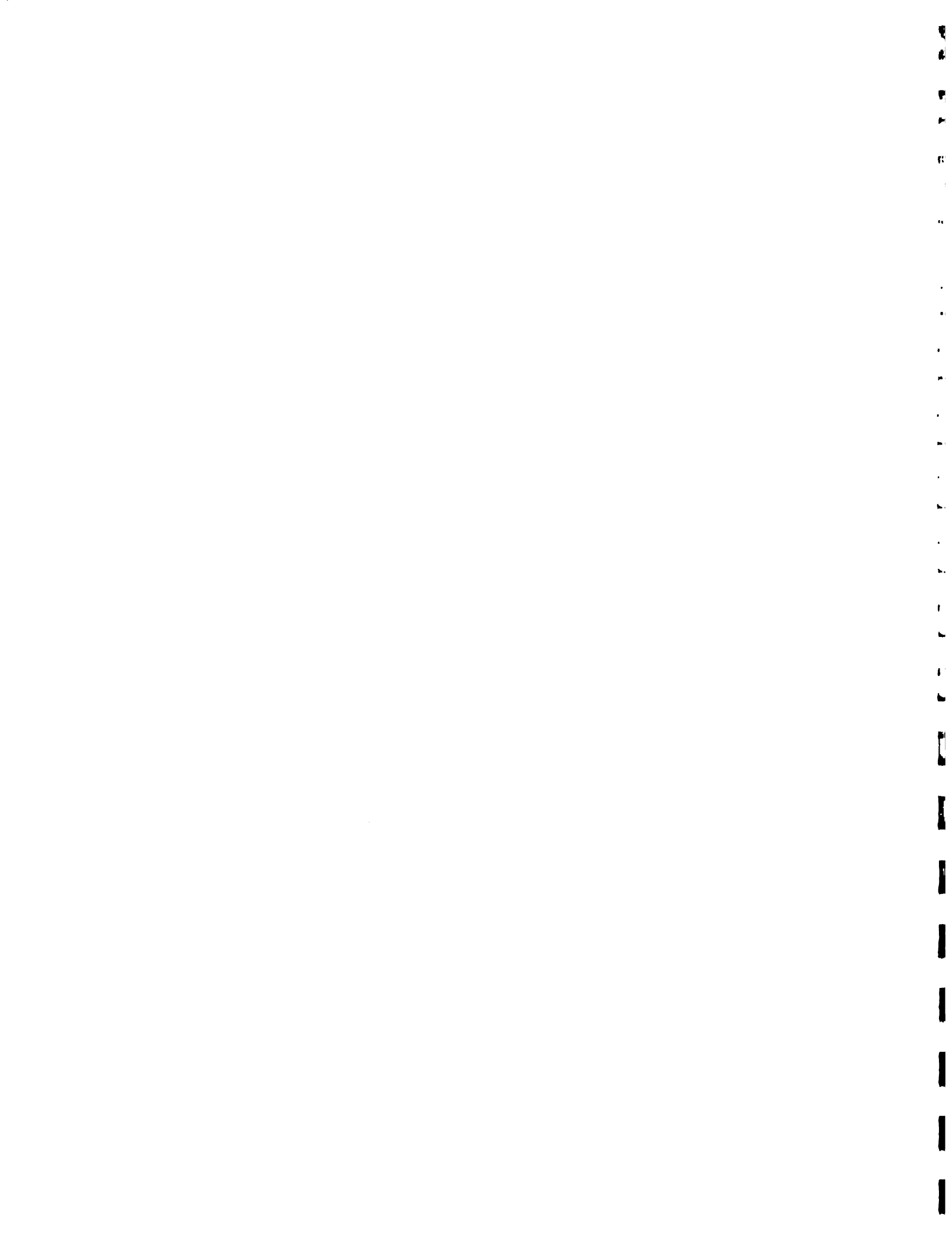




- Upgrading Crop Management Abilities - 1981-82
- Training Research and Development of Agricultural Production 1983-1986
- Association Community Enterprise Project - Perseverance Estate - National Agricultural Planning System
- Workshop on Farm Planning for Extension Agents - 1985
- Strengthening the 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 and the Grenadines 1986-87. Establishment of Fruit fly free status - MOA/USAID/IICA
- Project prepared for Improved "Delivery of Veterinary Services" 1984-1985
- Participation in Regional Animal Health and Plant Protection Programmes from 1980 to 1987
- Feasibility study of Animal Health Information and Surveillance System CARICOM/IDRC/IICA/North Carolina State University 1987
- Participation in CARAPHIN project from 1988. Survey and Monitoring of animal and plant diseases and pests to facilitate increased production efficiency in the Caribbean



- Regional workshop for the formulation and recommendations of the Project and Joint FAO/IICA workshop on "Problems of the African Locusts" held in Trinidad and Tobago
- Under the project - Strengthening Plant Protection and Quarantine Capabilities in the Windward islands and Antigua and Barbuda for the Marketing of Non-traditional Crops - 1988
  - Training in aspects of plant protection for farmers, propagators, quarantine and extension officers
  - Workshops on plant pests and disease problems and use of small volume application equipment
  - Leaflets on "Management of Wet Wood Termites"  
"Improve Mango Quality - Prune Now"  
"Management of Anthracnose in Mangoes"
  - Participation in meeting of plant protection officers to discuss the plant quarantine system for the OECS held in Trinidad and Tobago
- 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
- Under the Project - Strengthening of Farmer Organizations 1988
  - Profiles prepared on Farmer organizations in Grenada
  - Project profiles prepared for Strengthening Farmer Organizations in Grenada
  - Project profile prepared under title for Ministry of Agriculture's submission to IFAD for donor fund consideration
  - Report on the livestock subsector in Grenada with recommendations for its development during 1989-93
  - Establishment of the Inter-Island Steering Committee for Farmers Organizations ISCFO
  - Publication of Quarterly newspaper Focus on Integrated Rural Development
  - Pilot Project for inter-island Joint Marketing funded by CIDA
- Strengthening Agricultural Technology Generation and Transfer Systems in the Windward Islands. Functional reorganization of the National Agricultural Technology Development System from 1987



Identification and development of seven commodity based programs by Ministry of Agriculture

Study of Grenada's five agricultural stations for evaluation of support to Diversification

Facilitation of paw-paw seed from Barbados and St Lucia to Grenada

- Agricultural Sector Assessment for Project Identification - 1987
- Report on Soil and Water Management in Grenada - 1989
- Pilot Study on the level of farm income and praedial larceny (Cecilia Quashie - 1988)
- Participation in workshop "Preparation of Educational Radio Programmes and Printed Materials to Foster Rural Development in the Caribbean - IICA Headquarters, San Jose, Costa Rica, 1988
- Participation in two-months Spanish Training Programme in Caracas, Venezuela for three persons, 1988
- Assistance to the CARICOM Secretariat in the formulation of "Regional Agricultural Development Program" - 1988
- Preparation of the OECS Agricultural Diversification Programme for joint marketing collaboration with CDB and CARDI - 1987-88



## SUMMARY OF IICA ACTIVITIES IN THE OECS

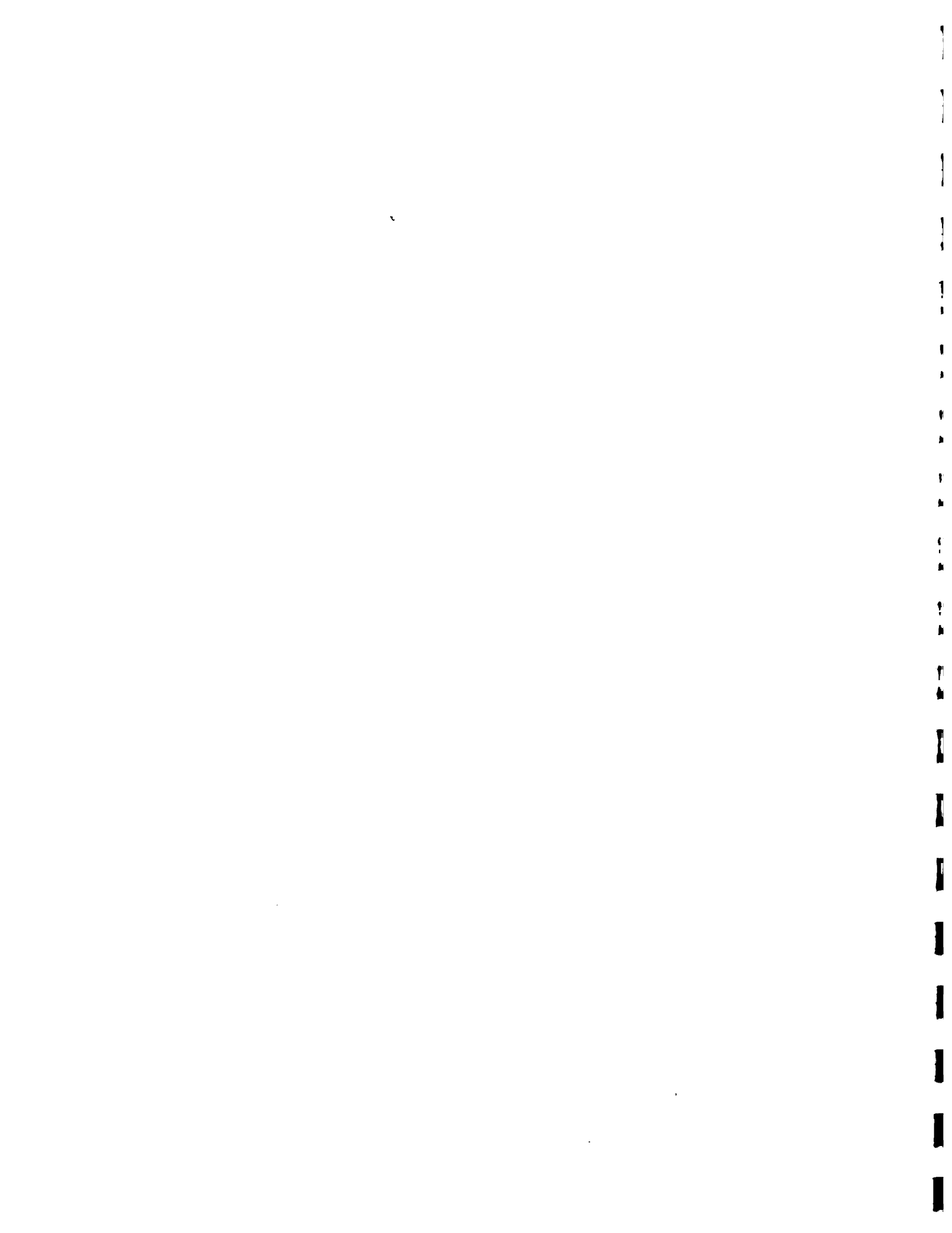
IICA's strategy in support of the policy for Agricultural Diversification of its member states was promoted through its three major technical cooperation projects and activities provided by other multinational projects involving the sub-region.

IICA was invited to form part of the Advisory Management Committee for the Agricultural Diversification Coordinating Unit (ADCU) established at a special meeting of Ministers of Agriculture of the OECS in Dominica in December 1989.

The three major technical cooperation projects for the OECS are (1) Technology Generation and Transfer (TGT); (2) Strengthening of Farmers Organization (SFO); (3) Strengthening Plant Protection and Quarantine Capabilities in the Countries of the OECS for the Production and Marketing of Non-traditional Crops (PPQ). Other multinational projects which impact on the OECS are - "Fruit Tree Crop Development" (FTCD) (Barbados, Guyana, OECS) and "Animal Health and Plant Protection Information and Data Monitoring System for the Caribbean (CARAPHIN). Technical assistance is also provided by the Project Unit established for the Caribbean, operating out of the Barbados Office.

The outstanding achievements of the TGT project are associated with the functional organization of the National Agricultural Technology Development Systems and the support provided for the development of priority core projects by the Ministries of Agriculture and their implementation. The Project facilitates access to appropriate technology within country, the subregion and the hemisphere and has collaborated closely with relevant institutions and agencies especially CARDI, the French Technical Mission, CATIE and the Food Crops Society. Technology transfer for yam production has led to the organization of the first commodity Networking System. A project for the production of improved hot pepper seeds was developed in collaboration with HIAMP, CARDI and Ministry of Agriculture's Core project in St Lucia. A similar project is being promoted in Grenada.

The general objective of the SFO Project is to improve the managerial, production and marketing capabilities of small farmers through farmer organizations. Achievements to date have exceeded expectations. The Project has so far received US\$100,000 from the Canadian Cooperative Association in support of its activities and generated several grants directly to farmers organizations. During the year the Project was supported by three Peace Corps Volunteers, (Dominica, Grenada, St Lucia) and a number of Short-term consultancies to address specific managerial constraints. Profiles of Farmer Organizations have been documented for Antigua and Barbuda, Dominica, Grenada and St Lucia and the inter-island Steering Committee of Farmers Organizations (ISCFO) with 14 farmer





organizations from six countries has developed into a recognized institution to facilitate production/marketing within the region.

The ISCFO meets quarterly and has been invited to form part of the Managerial Advisory Committee of the ADCU. Some fifteen shipments of produce have been undertaken between farmer organizations in Dominica, St Lucia to Antigua and Barbuda and from Dominica, St Lucia to Barbados through the Barbados Agricultural Society.

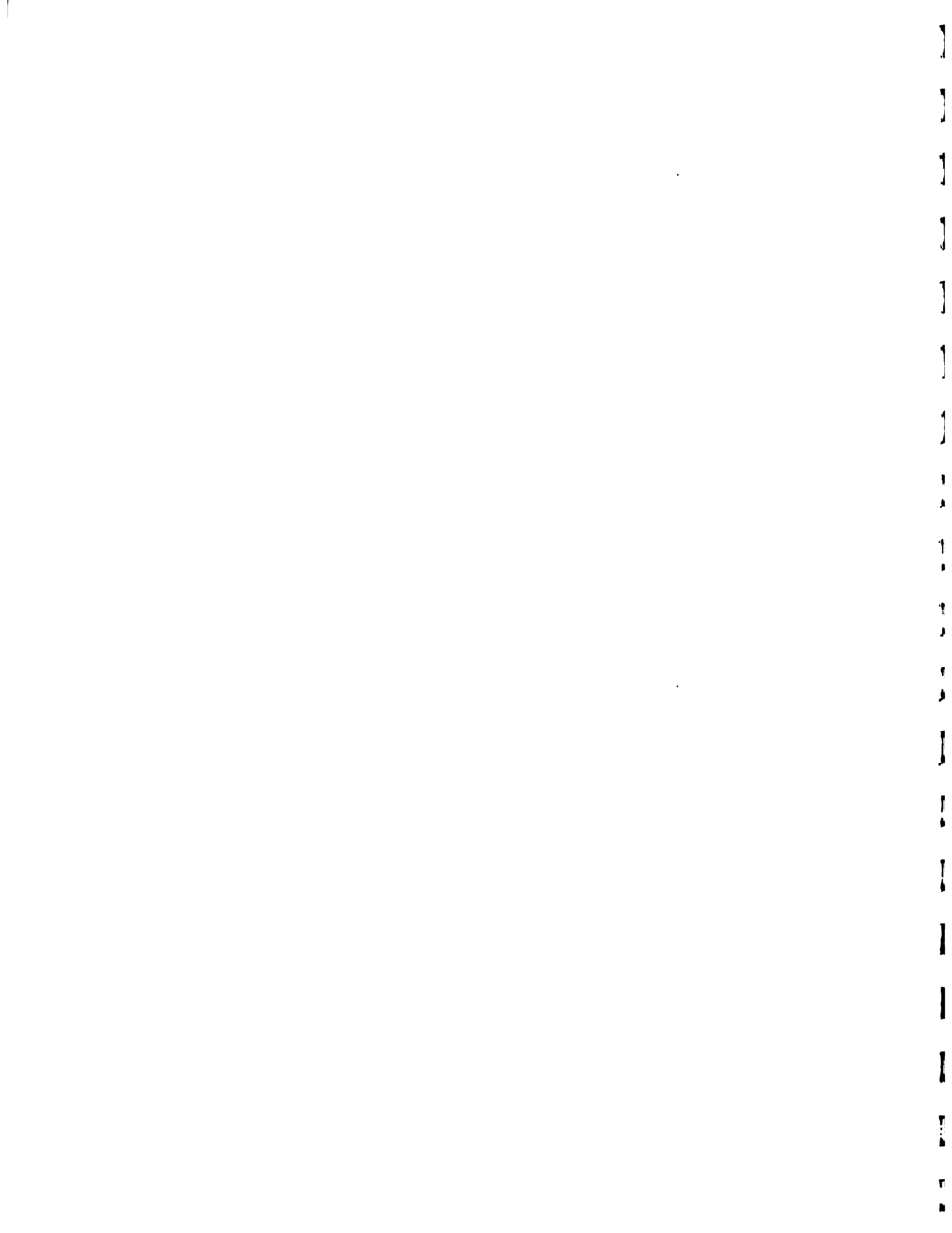
Databases have been prepared and in use with manuals for egg, broilers, pork and import substitution crops in St Lucia. On farm production and marketing information was computerized for the organization for Rural Development (ORD) in St Vincent and the Grenadines. Four issues of the newspaper "FOCUS on Integrated Rural Development" were circulated.

The Project has led initiatives to explore possibilities for Organic Farming in the drive for sustainable agriculture. A round table meeting and a workshop were held in Dominica with support from Organic Farms Ltd, ECO Science Laboratories and other agencies.

A trial shipment of organic grapefruit to the USA from Dominica was completed and satisfied juice and brix standards. Several project profiles attracting donor funding have been prepared. The project is represented on the interim board of management of STAFSCOOP in St Lucia and has received excellent support from farmers organizations as well as the Ministries of Agriculture. The Project has collaborated with several agencies and institutions in the hemisphere.

The Project promoted a visit to Colombia for Representatives of Banana Associations to ascertain requirements for agricultural diversification. The 25 year experience of the Coffee diversification program was reviewed and the document prepared by the Team was circulated.

The PPQ Project places emphasis on Training and Workshops for plant protection personnel. Several visits to farmers plots and government stations to assist diagnosis and advise on pest management were completed. Significant support for Pesticide Safety was generated and a meeting of the Pesticides Control Boards of the OECS was successfully held in Dominica and the proceedings documented. Analysis of the Plant Quarantine Systems of member countries led to the promotion of workshops in collaboration with FAO and USDA for the development of a uniform plant quarantine methodology for small states. The PPQ project supports several in country surveys and addresses specific commodity problems associated with mangoes, hot pepper, ginger, paw-paw, sweet potato. Work proceeds with the support of a Peace Corps Volunteer in St Lucia for the development of a plant protection data base. The PPQ



Project supports initiatives undertaken by CARAPHIN and participated in Training workshops promoted by that Project in Trinidad and Tobago. Workshops were also attended in Mexico on Regulations governing the entry of fruits into the USA - in Florida, USA on sweet potato sponsored by CIP and in Barbados on problems associated with importation of mangoes arranged by the CARICOM Secretariat.

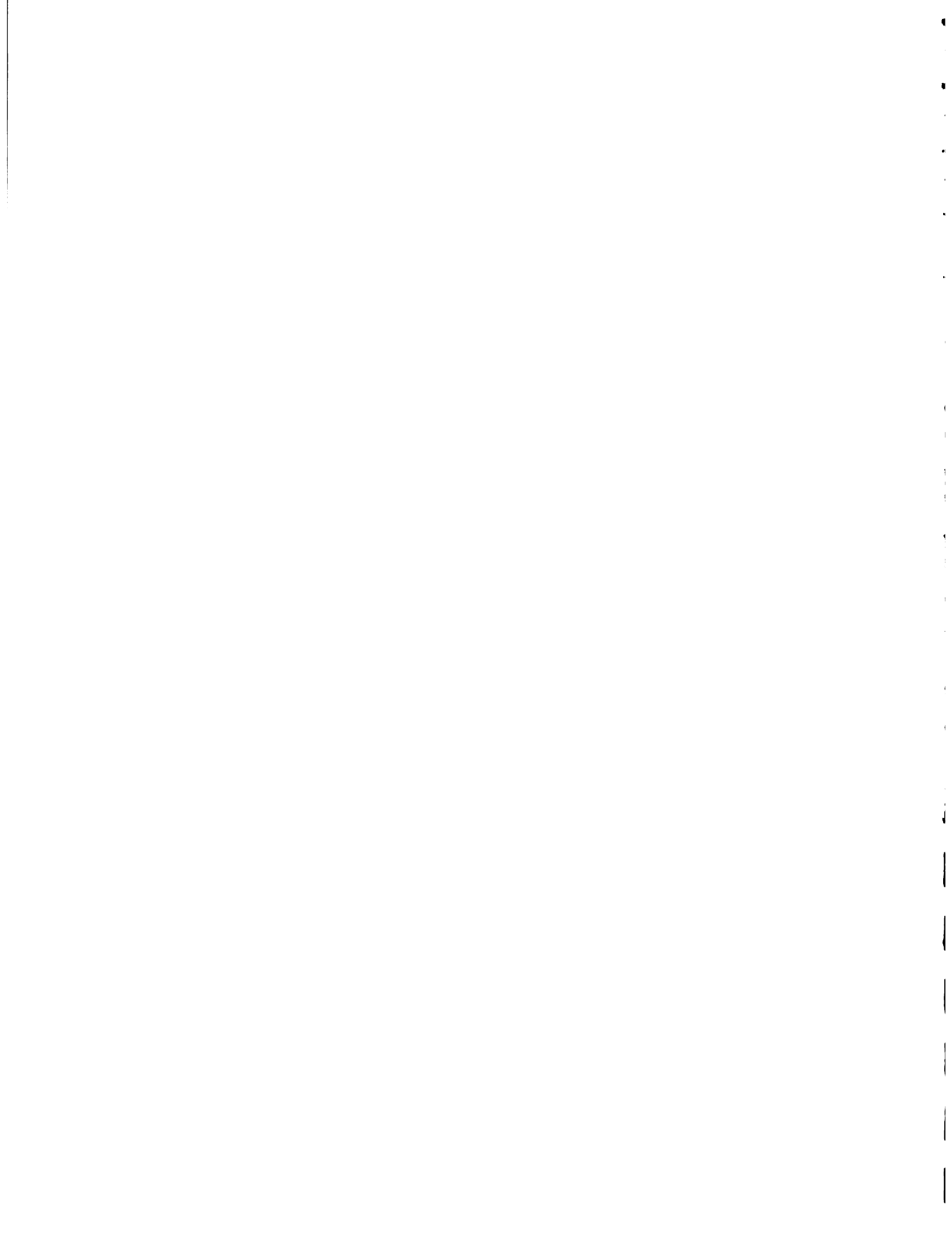
The FTCD Project was highlighted by the development of a paw-paw project in Grenada in association with HIAMP, the Progressive Farmers Union, CARDI and the Ministry of Agriculture. Through a Peace Corps Volunteer, IICA provides direct support to implementation and participates in a Technical Committee chaired by the Technical Officer, MOA. The Project assisted paw-paw production in Antigua and Barbuda through the Cooperative Farmers Association but regrettably Hurricane Hugo destroyed the young plants. In-service training in Barbados has been provided for technical personnel and participants from the OECS attended the international workshop on CARAMBOLA held in Guyana.

The CARAPHIN Project headquartered in Trinidad and Tobago, sponsored a workshop on epidemiology and basic computer training for animal health and plant protection personnel expected to implement the data monitoring system. Computers will be provided in each country. Newsletters were prepared and circulated as well as relevant information on plant protection and animal health. The third meeting of the International Commission for Animal health, COINSA III was held in Buenos Aires, Argentina. The Bluetongue Serological Survey involving Barbados, Jamaica, Trinidad and Tobago continued in collaboration with Universities of Florida and Wisconsin, Costa Rica, OICD, and other Central American countries.

The Project Unit continued its support to planning units especially in St Lucia and participated in a workshop in Grenada for Project Monitoring and Evaluation. The unit responded to a specific request from St Lucia for development of a proposal for Coconut Rehabilitation based on the outcome of a workshop held for the Coconut Industry sponsored by the Ministry of Agriculture.

Reviews of the Agricultural Sector Assessment Studies for Project Identification took place in St Vincent and the Grenadines and Antigua and Barbuda and received outstanding support from personnel of CARDI, UWI, OAS, French and Chinese Technical missions. These reviews were promoted and chaired by the Chief Agricultural Officer and Director of Agricultural Services respectively and will assist preparation of the Agricultural Development Plans and priority projects for these countries.

The Institute continued its support for the Management of *Amblyomma variegatum* in Dominica. The eradication measures undertaken by the Livestock Division and Veterinary Services of the Ministry of Agriculture received US\$15000 which was obtained



by IICA's Programme V Directorate. These funds were used to support field personnel, transport maintenance, purchase equipment and supplies.

By the end of the year 1989, the Tropical Bont Tick had not been identified in the quarantine area, surrounding Woodford Hill, since August 1987. All island surveillance measures nevertheless must be increased as regrettably, early in January 1990, a new focus of infestation was confirmed near the South of the Island at Grand Bay. Concerted efforts are required for an eradication programme for the Eastern Caribbean if reinfestations are to cease or the tick is to be prevented from eventually reaching mainland America.

Following Hurricane Hugo, the Ministry of Agriculture Antigua and Barbuda requested assistance from IICA specifically in the area of Vegetable Production. A Short Term Action was prepared, approved and Vegetable Seeds provided for distribution to farmers. Workshops, Demonstration plots monitoring and evaluation will be implemented through a technical committee in support of the Ministry's core project for vegetable production.



## TECHNICAL COOPERATION PROJECTS

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

#### 1. BACKGROUND AND JUSTIFICATION

This Project began in June 1988 to address the need for strengthening institutional technology generation and transfer capability in the Organization of Eastern Caribbean States (OECS), based on previous diagnosis of the national agricultural technology development system (NATDS) carried out by IICA in the region. As summarized from last year's report, the major constraints that beset that capability have resulted from

- 1) unsettled technology policy,
- 2) functionally diffused organization of the national agricultural research/extension subsystem (NARES)
- 3) insufficient managerial proficiency of the NARES professionals responsible for technology development
- 4) insufficient institutionalization of horizontal/reciprocal cooperation and networking, as organized mechanisms to maximize the use of scarce resources for technology generation and transfer (TGT), and
- 5) insufficient capitalization of external financial resources to fund complementary components of core TGT development projects.

#### 2. OBJECTIVES

##### 2.1 General

To increase the impact of the National Agricultural Technology Development Systems on agricultural development in the Organization of Eastern Caribbean States.

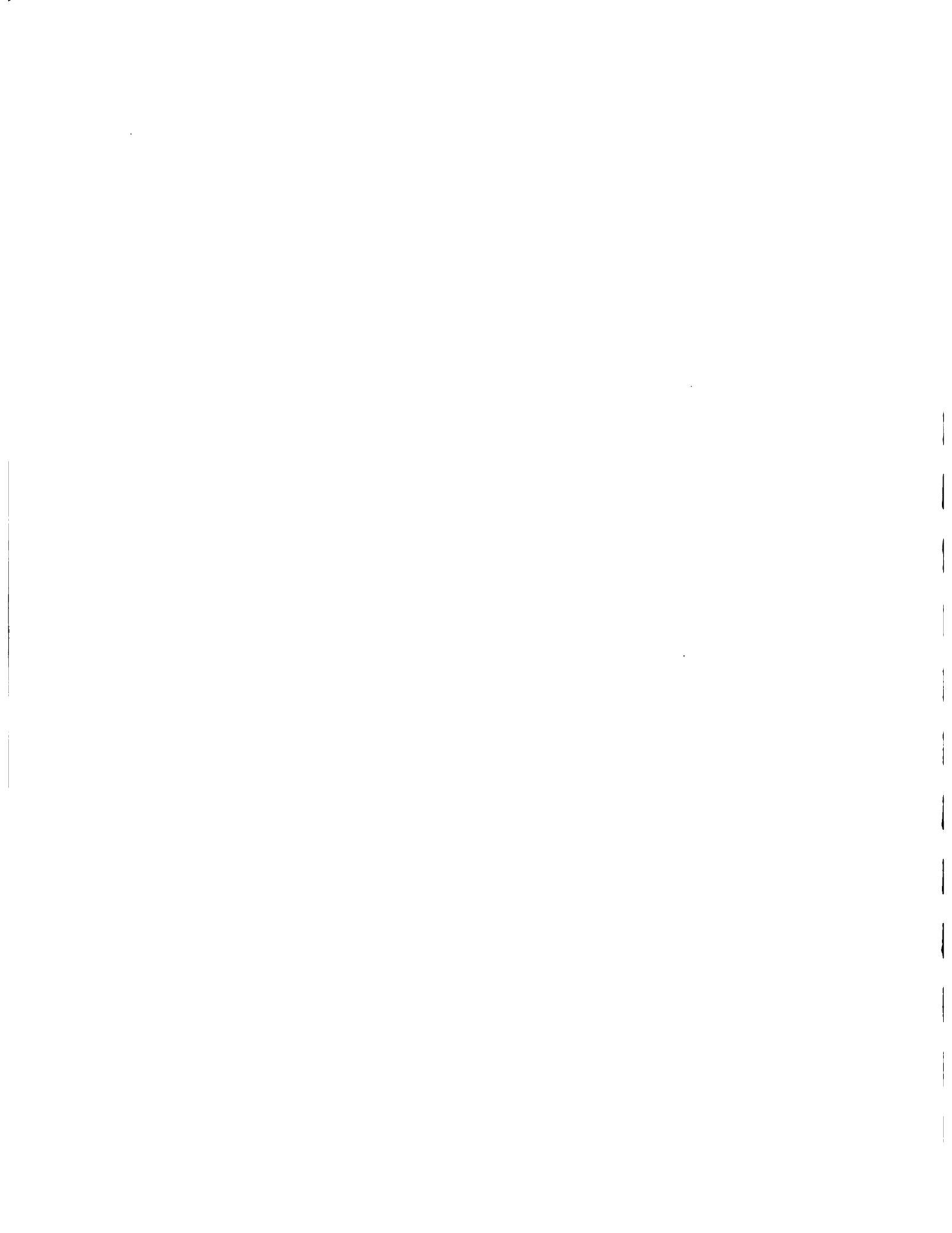
##### 2.2 Specific

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

#### 3. ACTIVITIES

##### 3.1 By Country

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 in each country, assistance is provided to the Ministry of Agriculture (MOA) to improve its TGT functions and operations

2) **Support for identification and transfer of appropriate technology**

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

3) **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.

3.1.1 **ANTIGUA AND BARBUDA**

The project assisted the MOA of Antigua (MOAA) in setting up policy guidelines for institutional support to technology development in agriculture. These served as the basis for the preliminary formulation of a national crop/livestock development work plan comprising six clearly defined technological development programmes, viz:

**Livestock**

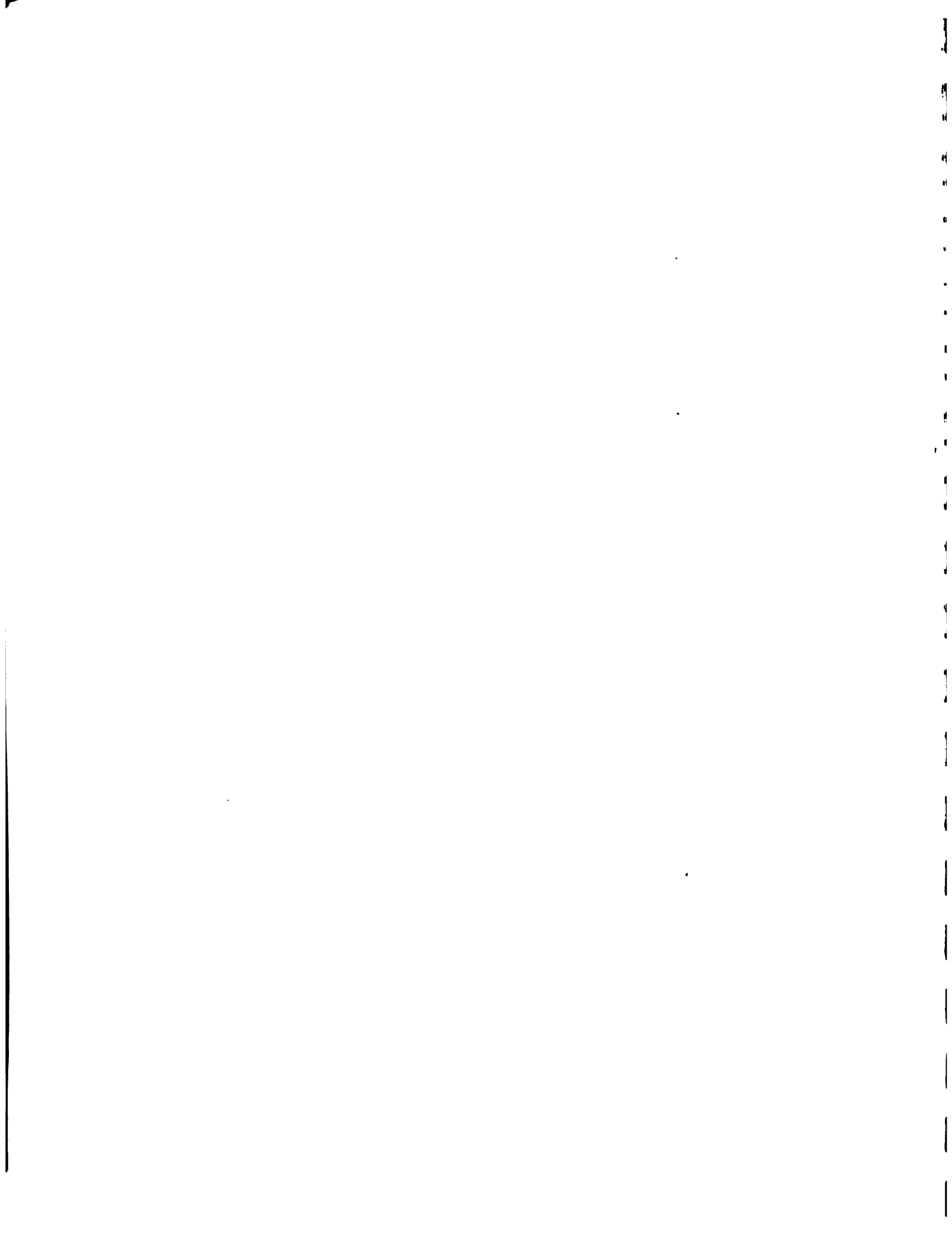
- 1) Small ruminants (sheep and goat)
- 2) Cattle
- 3) Pig

**Crops**

- 4) Vegetables
- 5) Roots and Tubers
- 6) Fruits

These programmes have been endorsed by a consultation of farmer organizations and relevant national as well as cooperation agencies, called by the MOAA.

To advise the MOAA on technology development issues, the National Agricultural Planning Committee (NAPC), chaired by the MOAA, set up a Production Technology Generation and Transfer (PTGT) Subcommittee. It groups relevant MOAA personnel (in Research, Extension, Policy-making) along with a representative each from the Central Marketing Corporation (CMC), the Caribbean Agricultural Research and Development Institute (CARDI), and IICA.



One expected role of the PTGT Subcommittee is to advise the MOAA on the functional reorganization of its Department of Agriculture (DOA), based on an on-going institutional diagnosis of the National Agricultural Technology Development System, conducted by IICA in cooperation with the MOAA.

Two two-member teams, comprising research and extension officers from the MOAA and one farmer each, visited St Vincent and the Grenadines to acquaint them with improved agricultural technology practices. The first team was interested in vegetable production (broccoli, cauliflower, onion) and the other, in fruit tree crop improvement (mango topworking). Their visit programmes were organized by the Ministry of Agriculture of St Vincent and the Grenadines (MOAV) in cooperation with IICA. Their experience is being applied in organizing the MOAA's core Vegetable and Fruit Tree Crop Development Projects.

### 3.1.2 DOMINICA

The MOA of Dominica (MOAD), with IICA's assistance, established its current "Plan of Work 1988-1990", in which the following six vertical/integrated Development Programmes have been formulated for the Department of Agriculture:

- 1) Livestock
- 2) Traditional Crops
- 3) Non-traditional Fruit and Exotic Crops
- 4) Roots and Tubers
- 5) Vegetables, and
- 6) Floriculture

These are backed by three horizontal institutional-support Programmes:

- 1) Rural Development
- 2) Technical Services, and
- 3) Regulatory Services

The programming model has been used for the three other Departments in the Ministry, namely:

- 1) Forestry and Wildlife
- 2) Lands and Surveys, and
- 3) Fisheries

The Plan of Work Document, endorsed by the Minister of Agriculture, is the official guide for the undertaking of agricultural development projects and activities in the MOAD.

On it are based the following 11 core crop/livestock development projects:

#### Livestock

- 1) Pig



## Crops

- 2) Plantain
- 3) Dasheen
- 4) Passion fruit
- 5) Hot peppers
- 6) Ginger
- 7) Anthurium
- 8) Bananas
- 9) Grapefruit
- 10) Coconut, and
- 11) Coffee

The strategy to implement the technological components of these projects during the 1989-1990 period, was developed by the MOAD's Team on Agricultural Technology (TAT) for crop/livestock development. The TAT comprises relevant staff of the MOAD (in Research, Extension, Planning) and one representative each from the Dominica Export Import Agency (DEXIA) and IICA.

Marketing commitments have been reached between the MOAD and DEXIA to ensure farmers' interest in embarking on producing the selected commodities and incorporating validated technological advances in their farming/marketing systems. Production targets for guaranteed buying during 1990 have been set for plantains, dasheen, passion fruit, hot peppers and anthuriums. The other commodities were found to be either sufficiently backed by current marketing arrangements (bananas, coconut, coffee) or needing market promotion by DEXIA/MOAD (ginger, grapefruit, pork).

The criteria for commodity selection and priority setting emphasized

- 1) Potential impact on foreign exchange savings/earnings
- 2) Potential impact on farmer income
- 3) Investment needs (public, private)
- 4) Farming systems compatibility, and
- 5) Food security

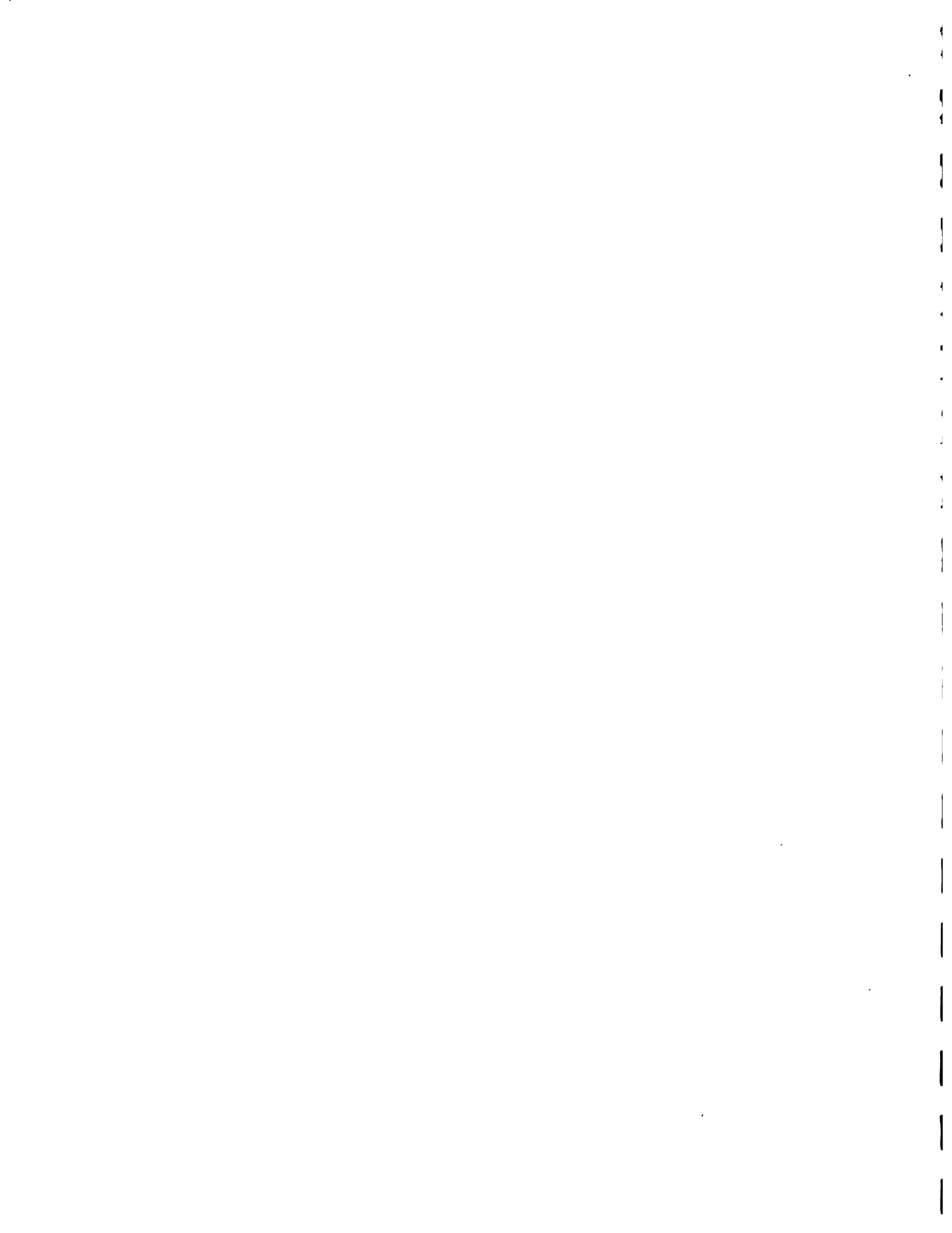
The MOAD has assigned Project Management responsibility to qualified staff and requested continued technical support from IICA for upgrading the functional organization and managerial as well as technical capability of the NATDS participants in implementing the projects.

### 3.1.3 GRENADA

From its established crop/livestock development work plan, the MOA of Grenada (MOAG) has formulated three national core projects with IICA's assistance. By programme areas, those are:

#### Livestock

- 1) Small ruminants (sheep and goat)



### Crops

- 2) Delight fruits (paw-paw, passion fruit, pineapple)
- 3) Export vegetables (hot pepper and eggplant)

Each project is managed by a Project Manager assigned by MOAG and technically supported by IICA and CARDI. To implement the work plan, the MOAG has introduced functional organization adjustments in the NATDS, based on previous institutional analysis supported by IICA.

The MOAG in cooperation with IICA, the United Nations Food and Agriculture Organization (FAO), the World Bank and other agencies, carried out a workshop to strengthen the capability of its Planning structure for monitoring and evaluating MOAG-based TGT development projects among others. A continued collaboration programme for the functional, operational and technical upgrading of the MOAG Planning Division, especially for monitoring the technological development of agriculture, was worked out between relevant (Planning, Policy-making) personnel at the MOAG and advisers from IICA as well as from the United Nations Development Program (UNDP) and FAO.

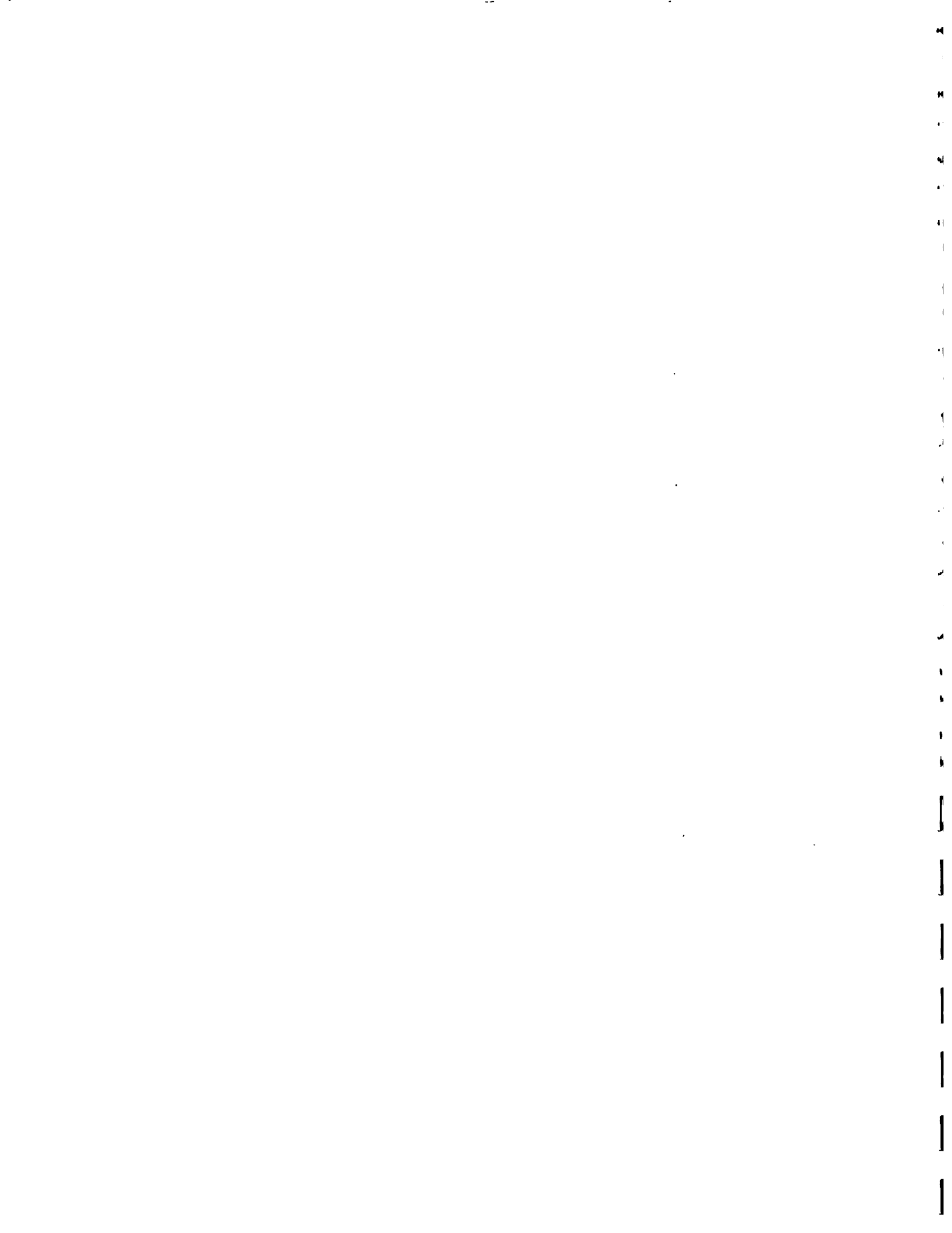
A group comprising one extension officer from MOAG and two farmers from Grenada visited St Lucia and Dominica to experience improved models of sheep and goat production systems. The visit programme was developed jointly between CARDI and IICA with the cooperation of the Ministry of Agriculture of St Lucia (MOAL) and MOAD. The team found the system used in Dominica which IICA has validated with the MOAD and CARDI quite in line with Grenada's technological needs for sheep/goat rearing and has outlined plans to incorporate it into the MOAG core Small Ruminants Development Project.

The head of the Agronomy Division of the MOAG also was supported by IICA, in cooperation with MOAD, to observe passion fruit production in Dominica. The results of that exchange have been useful for fine-tuning the MOAD core Delight Fruit Development Project.

An investment project to produce disease-free seed of hot pepper has been drafted for external funding, by the MOAG in cooperation with IICA and CARDI. A potential donor agency has indicated interest in funding the project once it had been fully formulated. The direct beneficiaries will be hot pepper farmers and exporters in the country.

#### 3.1.4 ST LUCIA

With IICA's assistance, the Ministry of Agriculture of St Lucia has formulated and launched six core national crop/livestock development projects, based on its current Agriculture Work Plan. By programme area these are:





### **Livestock**

- 1) Small ruminants (sheep and goat)
- 2) Swine
- 3) Poultry

### **Crops**

- 4) Non-traditional crops (hot peppers, plantain, ginger)
- 5) Roots and tubers (yam and sweet potato)
- 6) Vegetables (tomato, cabbage, carrot, sweet peppers)

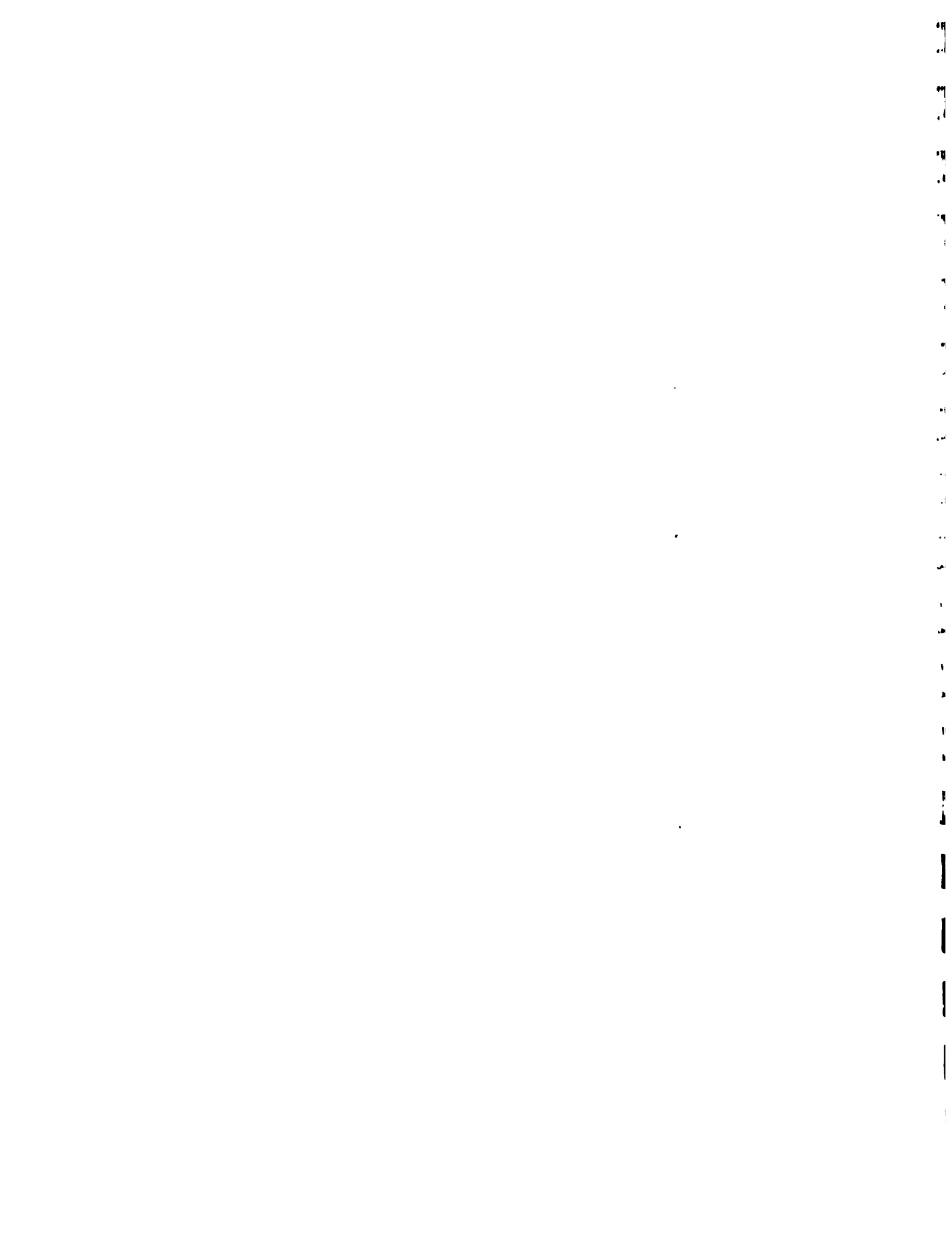
Each is managed by a Project Leader assigned by the MOAL and technically supported by IICA. Some of the projects also receive technical assistance from CARDI (small ruminants, non-traditional crops, roots and tubers). Recent field monitoring of the projects, conducted by the TAT led by MOAL revealed remarkable progress toward achieving project goals, especially in livestock (poultry), vegetables and yam.

In support of agricultural technology policy and priority setting, IICA participated in both the National Agricultural Advisory Council (NAAC), chaired by the MOAL and its Research/Extension Committee. This Committee facilitates more effective functional linkage between research and extension in the NATDS.

Through assistance from IICA, the MOAL acquired improved yam (cv Ladies) planting material from the MOAD. Yam production in St Lucia has been hampered by scarcity of good planting material of suitable cultivars, especially for export. The material obtained from Dominica is now being observed in selected farmer fields in St Lucia for technological validation and if successful, for mass distribution to interested growers.

In St Lucia, IICA and CARDI have assisted the MOAL in preparing the Project "Production of High Quality Virus-free Scotch Bonnet Hot Pepper Seed". The Project was presented to and is financed by the High Impact Agricultural Marketing and Production (HIAMP) project of the US Agency for International Development (USAID) through its Commercialization Fund window, for up to US\$10000 a year. It is executed by the MOAL and administered by CARDI, with technical assistance from IICA.

With IICA's support, another project to rehabilitate the coconut industry has been drafted in a profile form and endorsed by the MOAL. Following the results of its feasibility study, it will be formulated for external funding. Several of its components bear on agro-technological development of production, processing and marketing of coconuts. Bananas and coconuts are the major traditional commercial crops in the country.



### 3.1.5 ST VINCENT AND THE GRENADINES

As a result of the agricultural sector assessment carried out by IICA in St Vincent, some technological development needs have been identified. On that basis, IICA and CARDI assisted the Ministry of Agriculture of St Vincent in formulating a preliminary yam technological development project profile, as component of an expected broader national work plan for crop/livestock development.

Two professionals from the MOAV, supported by IICA, visited small livestock development projects run by the MOAD in cooperation with CARDI and IICA. The experience will be used in formulating an anticipated core Small Ruminant Development Project at the MOAV.

In cooperation with the Ministry of Agriculture of St Lucia and the French Cooperation Mission (FCM) Rural Development Projects Coordination based in St Lucia, IICA organized the first Regional Advisory Workshop for Yam Development Projects in the Eastern Caribbean. It led to the establishment of a Regional Yam Projects Network (YPN), involving all the five IICA-member countries in the OECS. Technical inputs for the plan of activities of the Network were provided by the National Agronomic Research Institute/Antilles-Guyane (INRA/AG) of France, based in Guadeloupe and by CARDI.

Through active cooperation with the Caribbean Food Crops Society (CFCS), the IICA Multinational TGT Project facilitated the exchange of information between the OECS and other regions within or outside the Caribbean on technological advances in agriculture.

With financial support from FCM two Yam Development Project Leaders from the OECS were able to participate in the 25th Annual Meeting of CFCS in Guadeloupe, hosted by INRA/AG.

Within the framework of a plan to develop and intensify horizontal cooperation between Latin America and the Caribbean, IICA assisted its OECS member-countries in identifying areas of potential cooperative activities with Brazil for the technological development of agriculture in the region. A four-person team drawn from Brazilian institutions responsible for the development of External Cooperation, Agriculture and Agro-industry assisted by IICA, visited all five OECS IICA-Member Countries. Initial proposals for technical/financial cooperation have been outlined for final formulation and eventual implementation. They include assistance from Brazil in areas related to agro-technology generation and transfer.

Hillside farming systems in the Windward Islands have shown slow technological improvement over the years, in spite of several development projects targeted at them. These include Farming System Research/Development projects or activities implemented by CARDI, the University of the West Indies (UWI) and FCM. The



scarcity of valid technological options focussing on their particular production marketing constraints and the low financial capacity of hillside farmers to incorporate investment-requiring technological innovations in their production practices are the major underlying drawbacks. The IICA TGT has outlined the basis of a proposal which could lead to the formulation and implementation of an externally-funded project, to support the technological improvement of hillside farming systems in the Windward Islands.

IICA has joined CARDI and other agencies operating in the region in setting up a Caribbean Farming Systems Network (CFSN) to address critical constraints to the technological development of the farming systems, through exchange of information. IICA has also assisted CARDI in preparing a revised draft document of the Project "Caribbean Cooperative Agricultural Research Network (CCARN)", for funding by the Inter-American Development Bank.

#### 4. PROPOSED ACTIONS FOR 1990

Project actions in 1990 will continue along the guidelines of the three basic activities, namely:

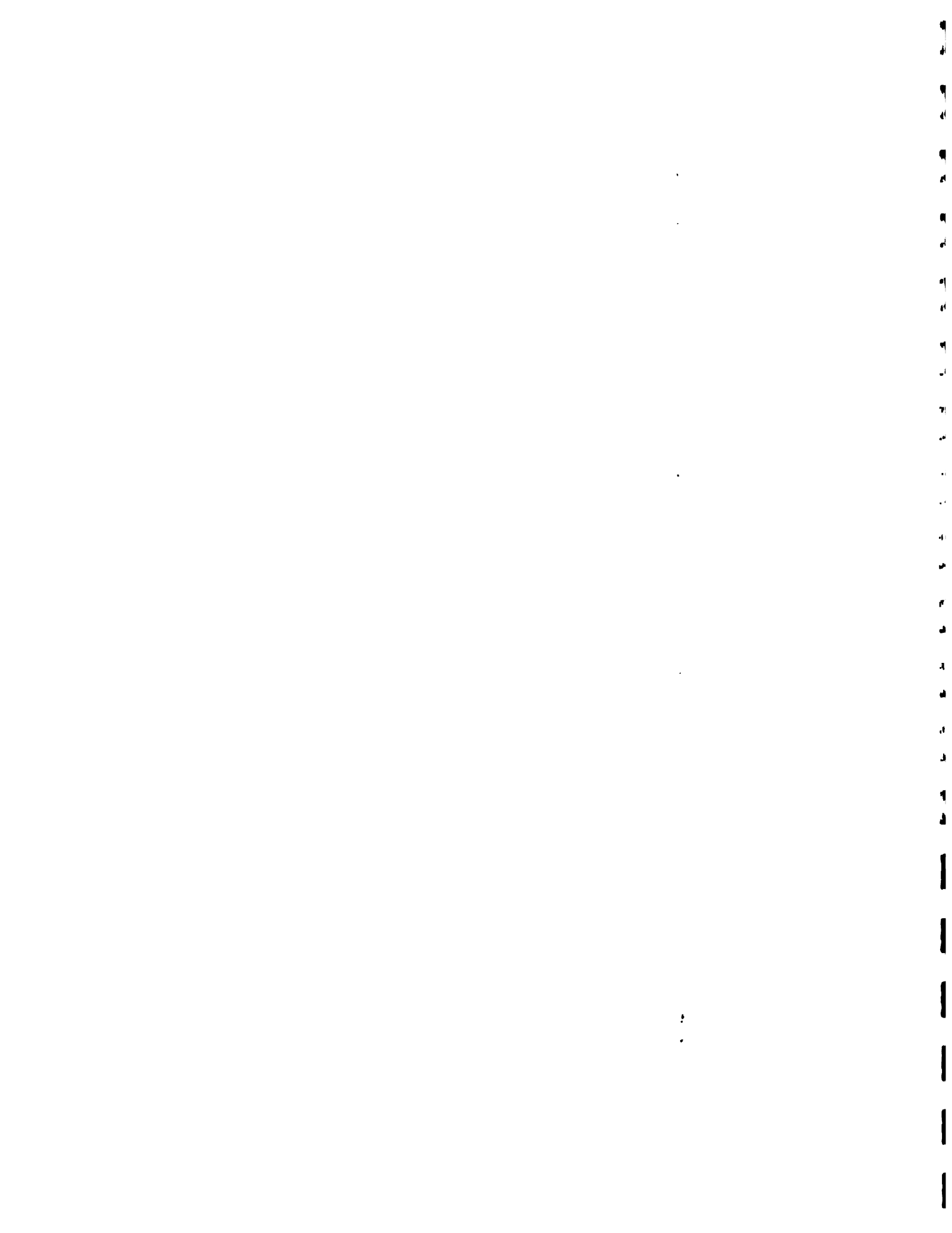
##### 4.1 Technical Support to Functional Organization and Management of National Agricultural Research and Extension Systems

- Assistance will be provided to the MOA to pursue institutional consolidation of crop/livestock development programmes in each participating country.
- The NATDS in St Vincent and the Grenadines will be assessed for improving its functional organization and management.
- Networking among the MOA's will be organized and technically supported to facilitate and strengthen diversification of the agricultural sector in the OECS.

##### 4.2 Support for Identification and Transfer of Appropriate Technology

- Relevant technology for agricultural development in the OECS will be accessed from outside the region and incorporated in the crop/livestock work programmes of the NATDS.
- Institutional linkages between the MOA's and external agricultural research/development institutions will be established or strengthened.

##### 4.3 Technical Assistance for Investment Project Development and Implementation



- Needs for externally funded investment projects to shore up established core crop/livestock development programmes at the MOAs, will be assessed.
- In cooperation with relevant units in IICA, technical assistance will be provided to the MOAs to formulate the identified projects.
- The MOAs will be technically supported to improve their management capability for project implementation.

## **STRENGTHENING OF FARMER ORGANIZATIONS IN THE OECS**

### **1. BACKGROUND**

The IICA project "Strengthening of Farmer 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.

Farmer 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 who produce an assortment of agricultural crops 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, weak management and offer few, if any, services to their members.

The priority problems restricting the development of farmer organizations in the OECS were determined to be the following:

1. Many farmer organizations in the OECS are operating without legal standing and with a low level of farmer participation.
2. Management is weak and undertaken on a voluntary part-time basis.
3. Management and members of farmer organizations lack the necessary skills in administration, collection and dissemination of information, project formulation and execution, postharvest handling and marketing.
4. Services provided through the non-traditional farmer organizations are weak or non-existent.





5. Communication systems between members and between farmer organizations are weak or non-existent.
6. Baseline production/marketing information for decision making is unavailable.
7. Technical and financial resources are scarce or provided to groups on an ad hoc basis with little followup or monitoring.
8. Farmer organizations lack the expertise or access to expertise for the formulation of systematic production and marketing programs.

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 1988 the four year project "Strengthening of Farmers Organizations in the OECS."

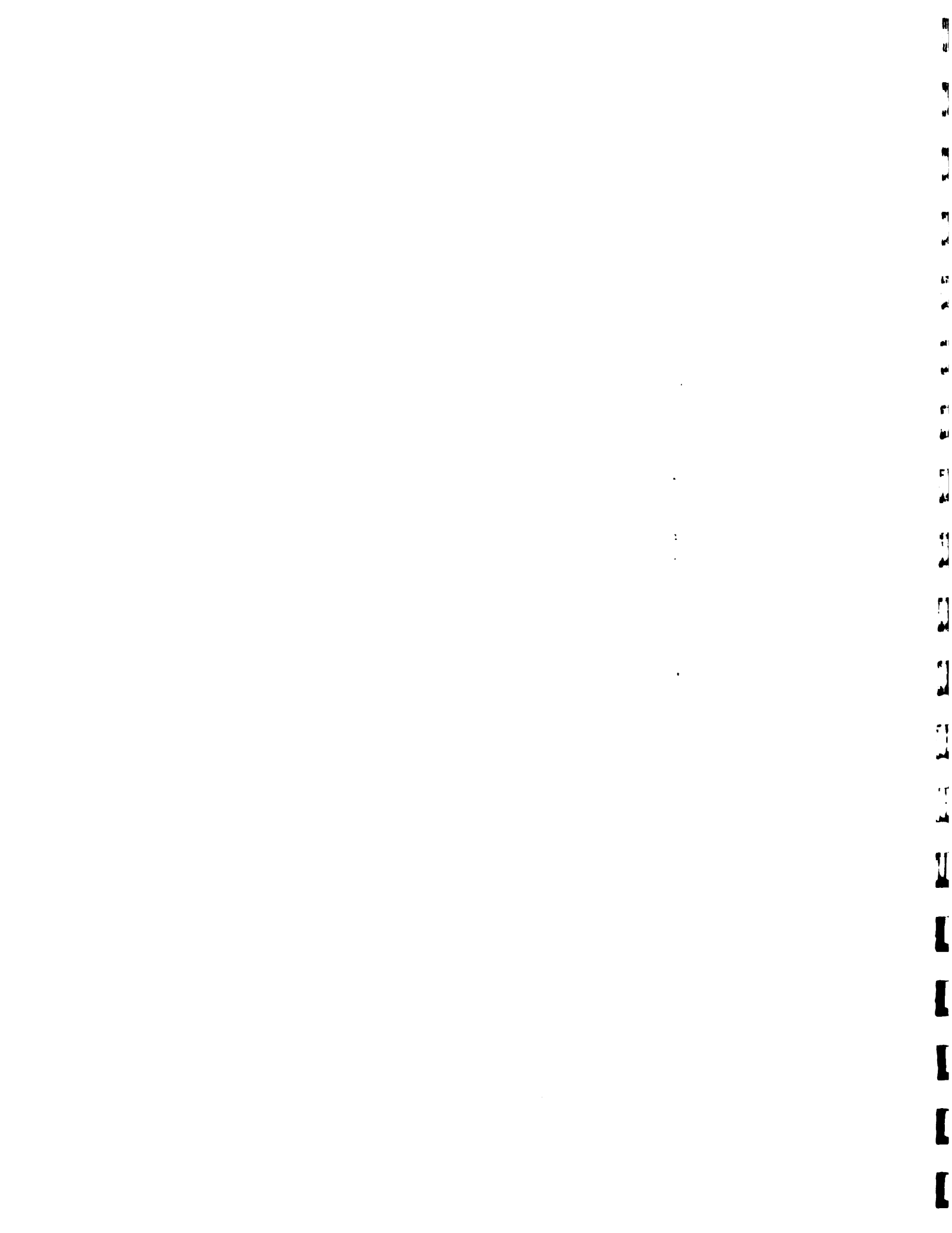
The project recognizes that farmers in the OECS countries make significant contributions to the economies of their respective countries and, being small farmers, require strong organizations to provide the necessary production and marketing services.

## 2. OBJECTIVES

General: Improve the managerial, production and marketing capabilities of small farmers through farmer organizations.

Specific:

1. Determine the principal needs of farmer organizations in respect to the development of their organizational and managerial capabilities and their production and marketing services.
2. Assist farmer organizations in each participating country develop strategies to strengthen and consolidate their management and production/marketing services.
3. Assist farmer organizations in the formulation and execution of commodity specific production and marketing projects.
4. Design and execute training programs to assist farmer organizations overcome specific priority development constraints.



5. Establish effective Sub-regional communication networks to meet the needs of farmer 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.

Elements of the strategy to strengthen farmer organizations include:

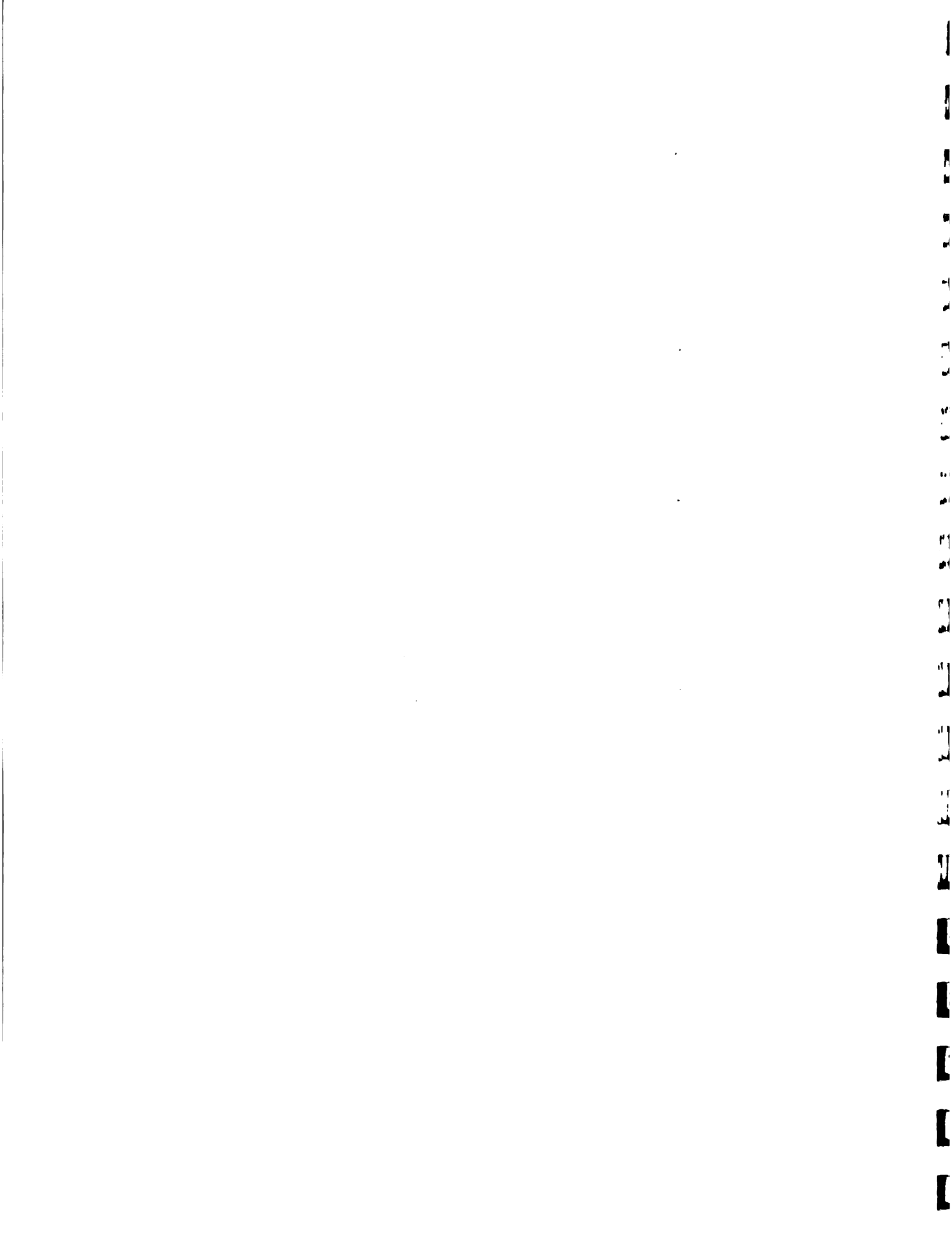
- promotion of an active participation of farmers in all decision making activities;
- development of decision making and managerial capabilities;
- building on organizational structures which already exist;
- involving local and regional expertise in project design and execution;
- developing production/marketing programmes for niche markets, and
- improving integration/coordination among the many national, regional, international and bilateral institutions supporting agricultural/rural development.

### 3. ACTIVITIES BY COUNTRY

During its second year of operation (1989) the following activities were carried out under the project to Strengthen Farmer Organizations in the OECS:

#### Antigua:

- a) Prepared a baseline document with profiles on farmer organizations in Antigua and their needs for development.
- b) Carried out an analysis of the managerial and administrative needs of Cooperative Farmers Association (CFA) and trained members of Executive in management planning, organization and decision making.
- c) Designed and put in place a Financial Management System for the CFA and trained executive in its use.
- d) Provided technical assistance to CFA in the formulation of two projects to obtain a tractor and basic marketing equipment. Funding is being obtained for the marketing improvement project.
- e) Provided training to one farmer and two MOA professionals in the area of organic farming and marketing.



- f) Through the Inter-Island Steering Committee of Farmer Organizations, established trading in fresh produce between farmer organizations in Dominica/St Lucia and CFA in Antigua. Over 10 shipments were made with IICA acting as communication center.
- g) Provided guidelines to the MOA for the development of a national strategy to strengthen farmer organizations.
- h) Four issues of farmer newsletter "FOCUS on Integrated Rural Development" were circulated to over 200 persons.
- i) Two representatives from farmer organizations in Antigua participated in three planning meetings of the Inter-Island Steering Committee of Farmer Organizations.

Dominica:

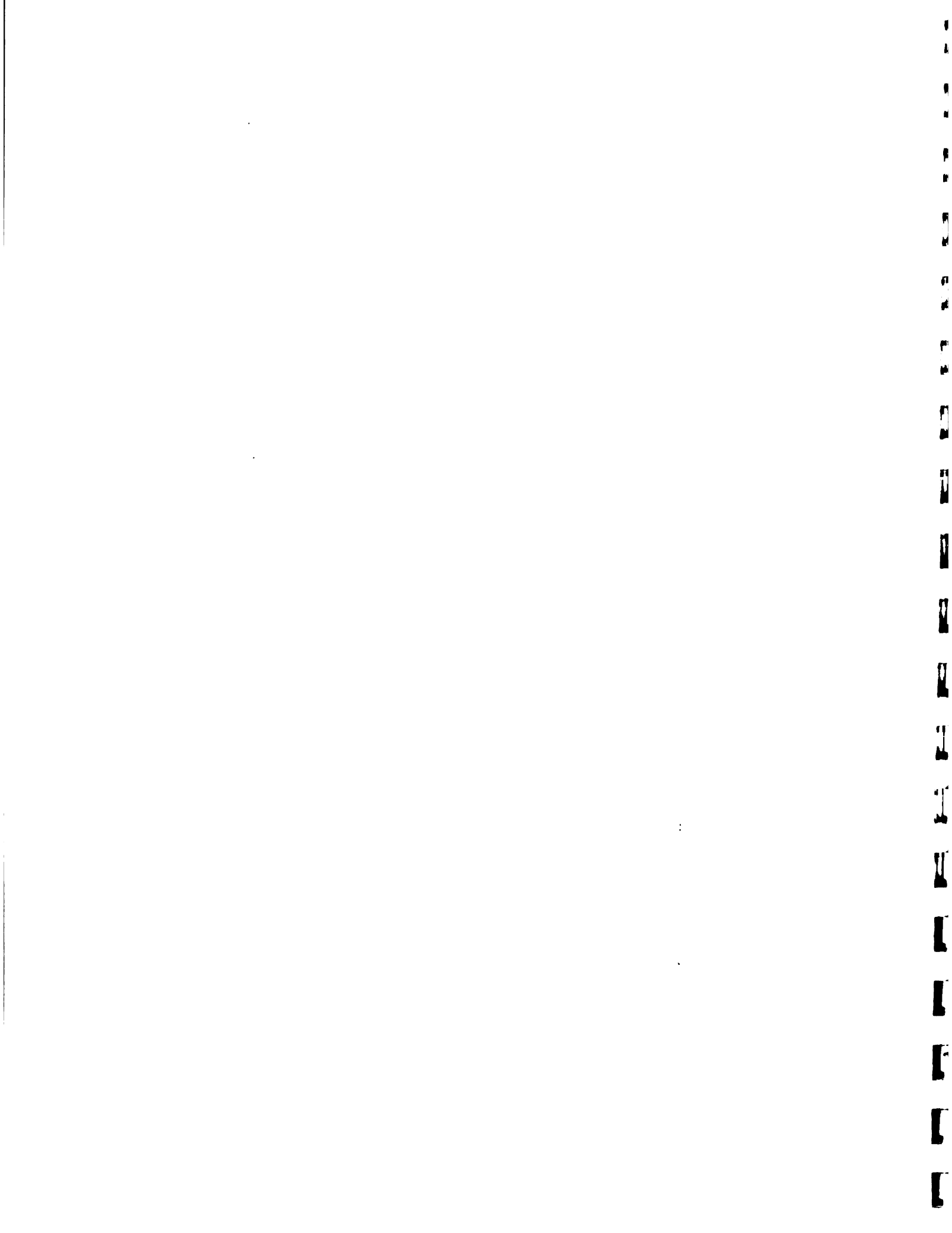
- a) Published a baseline document with profiles on farmer organizations in Dominica.
- b) A proposal for a National Strategy for Strengthening Farmer Organizations in Dominica was formulated based on discussions with farmers and MOA staff and has been accepted in principle.
- c) Prepared a proposal for a pig production credit programme for the National Pig Producers Association (NPPA).
- d) Assistance was provided to the Dominica Huckster Association in the formulation of a series of projects to strengthen that organization institutionally. Approximately US\$84,000 was obtained by DHA from NGOs as a result.
- e) Projects were formulated for two farmer groups to obtain a tractor and an irrigation system.
- f) Four NPPA staff received in-service training in management, pig production credit, production, processing and marketing. Trips were organized to farmer organizations in Barbados and St Lucia.
- g) Assisted Dominica Hucksters Association (DHA) in establishing trading operations with the CFA in Antigua.
- h) Three representatives from farmer organizations in Dominica participated in three planning meetings of the Inter-Island Steering Committee of Farmer Organizations.



- i) Four issues of farmer's newsletter "FOCUS on Integrated Rural Development" were circulated to over 300 persons.
- j) A one day Roundtable (June 8) and a five day Workshop (October 16-21) on the production and marketing of "organic foods" were organized.
- k) A niche market for organic grapefruit in the USA was identified and DEXIA/MOA were assisted in the preparation of a sample shipment. Laboratory results showed that product meeting US juice and brix standards. Negotiations are underway for a container load.

Grenada:

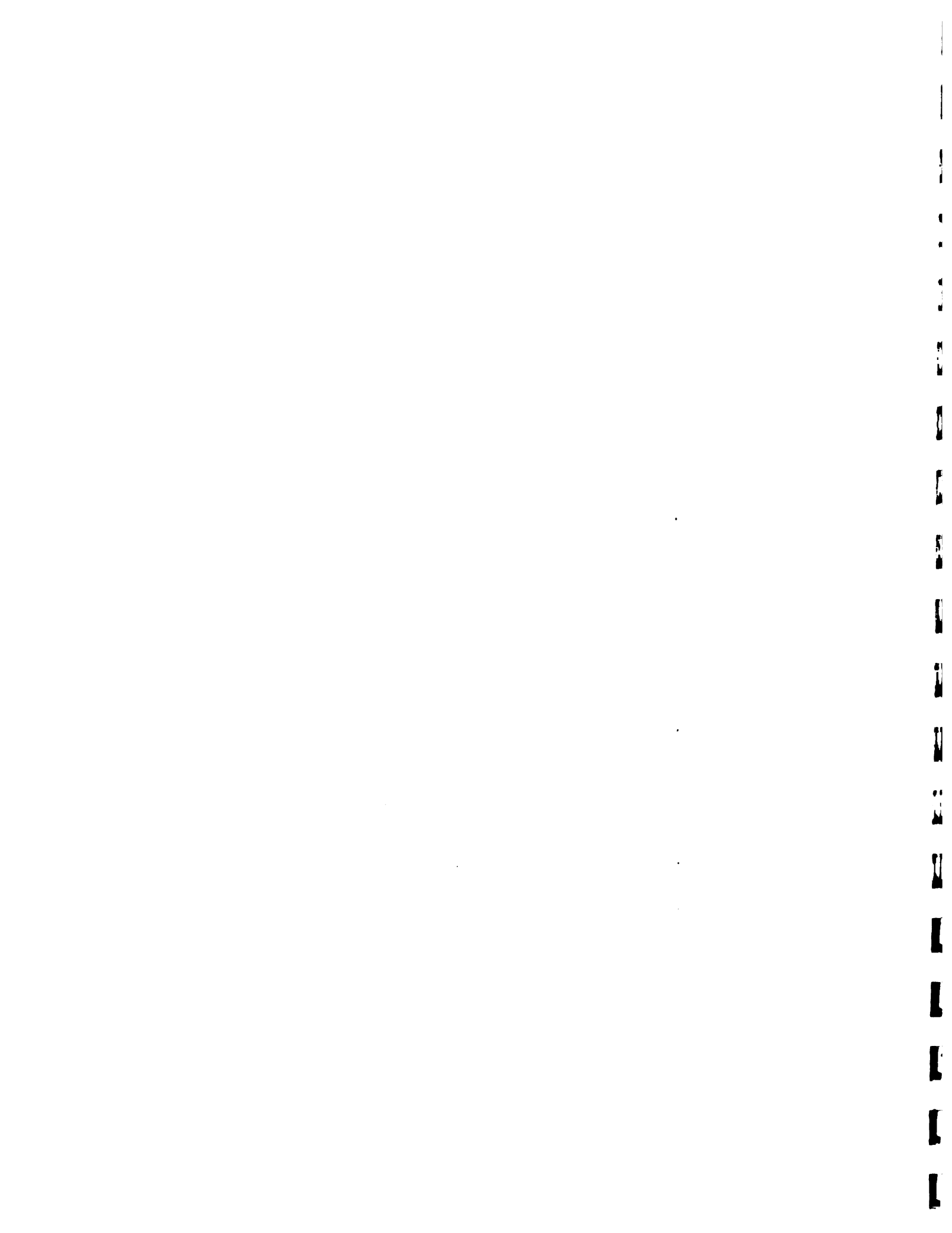
- a) A baseline document with profiles on farmer organizations in Grenada was prepared and is being edited for publication.
- b) A project to provide marketing equipment to the Productive Farmers Union (PFU) was prepared and has been tentatively approved for funding.
- c) Carried out an analysis of the managerial and administrative needs of PFU and trained members of Executive in management planning, organization and decision making.
- d) Designed and put in place an Accounting System for the PFU and trained staff in its use.
- e) Prepared a report on the legal status of PFU with recommendations for restructuring.
- f) Technical assistance was provided to the Grenada Livestock Association to design a strategy for strengthening the livestock sub-sector.
- g) Two farmers received in-service training in small livestock production in St Lucia and Dominica.
- h) Two representatives from farmer organizations in Dominica participated in three planning meetings of the Inter-Island Steering Committee of Farmer Organizations.
- i) Four issues of farmer newsletter "FOCUS on Integrated Rural Development" were circulated to over 300 persons.





St. Lucia:

- a) A baseline document with profiles on farmer organizations in St Lucia was prepared and 200 copies were made.
- b) A proposal for a National Strategy for Strengthening Farmer Organizations in St Lucia was formulated and approved by farmers and MOA staff for implementation.
- c) A National Steering Committee of 20 rural organizations was established and celebrated two meetings.
- d) A project to provide marketing equipment to the Sunshine Harvest Farmers Cooperative was prepared and has been tentatively approved for funding.
- e) An analysis of the managerial and administrative needs of Sunshine Harvest and Ti Rocher co-operatives was made and members of Executive trained in diverse aspects of management.
- f) Designed and put in place a Financial Management System for Sunshine Harvest and trained staff in its use.
- g) Provided coordination for the development of the slaughterhouse project which is to be operated by St Lucia Association of Farmer's Cooperative (STAFCOOP) and financed by Special Project for Investment Facility Canada (SPIF).
- h) Provided technical assistance to STAFCO-OP in the areas of planning, financial management, accounting, marketing, and analysis of broiler industry, during period of management crisis.
- i) Weekly classes were given to 11 agricultural students at Union Agricultural School in business and farm management.
- j) Designed and prepared the following databases with their respective manuals for collectors of information and users of the database:
  - Import Substitution Crops;
  - Eggs/Broilers;
  - Pork.
- k) Trained STAFCO-OP and MOA staff in the operation and management of the three databases mentioned above and in R-Base programming.
- l) Trained 23 extension officers in the collection of information for the import substitution data base.



- m) Trained STAFCO-OP secretarial staff in the use of the WP50 word processing.
- n) Provided clearing house information service for inter-island trade.
- o) Assisted Sunshine Harvest and Belle Vue Coops initiate inter-island trade. Over 10 shipments were made to Antigua and Barbados.
- p) Representatives from STAFCO-OP and Belle Vue Farmers Coop participated in three planning meetings of the Inter-Island Steering Committee of Farmer Organizations.
- q) Four issues of farmer newsletter "FOCUS on Integrated Rural Development" were published (3000 copies) and circulated throughout the region.

St. Vincent:

- a) Computer program for the management of on-farm production and marketing information was put in place at Organization for Rural Development (ORD) and staff trained in its operation and maintenance, and in R-Base programming.
- b) Manuals were published for extension officers who collect information for the "ORD" database and for the computer operators who manage the database.
- c) Provided guidelines to the MOA for the development of a national strategy to strengthen farmer organizations.
- d) Representatives from ORD and National Farmers Union participated in two planning meetings of the Inter-Island Steering Committee of Farmer Organizations.
- e) Four issues of farmer newsletter "FOCUS on Integrated Rural Development" were circulated to over 300 persons.
- f) Arrangements were made to provide the necessary technical assistance to formulate a project for the production and marketing of passion fruit in February, 1990.

Barbados

- a) A consultant's report was prepared on the needs of Barbados Agricultural Society (BAS) to expand their retail/wholesale operations to effectively market produce from the Windward Islands.

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- b) A project was prepared to expand BAS marketing infrastructure and a source of funding was identified.
- c) Some five shipments of fresh produce were made from Dominica and St Lucia to the BAS in an attempt to explore market potential

#### 4. JOINT ACTIVITIES

This IICA project to Strengthen Farmer Organizations in the OECS is a Multinational project presently covering five countries. Assistance is also given to the Barbados Agricultural Society, through the Inter-Island Steering Committee of Farmer Organizations. Although many specific actions may be country specific, a large number of activities have an impact upon as many as six islands. A brief summary of the project activities of a multinational nature is presented below:

- a) A quarterly newspaper, "Focus on Integrated Rural Development" was initiated in 1988. Seven editions (four in 1989) have been published (3,000 copies each) and circulated throughout the region.
- b) An Inter-island Steering Committee of Farmer Organizations (ISCFO) was formed in March 1988 in Dominica. This group includes representatives from both livestock and crop farmers from each island. The ISCFO meets quarterly to exchange experiences, identify priority projects, approve actions of the Secretariat and plan future actions. In 1989, meetings were held in Grenada, Barbados and St Lucia with 14 farmer organizations from six islands represented.
- c) A project was prepared and a source of funding was identified to institutionalize the ISCFO. The ISCFO was asked to sit on the OECS Agricultural Diversification Coordinating Unit Management Committee.
- d) Inter-Island joint marketing was initiated in June of 1989 from Dominica and St Lucia to Antigua and Barbados. Approximately 15 shipments of fresh produce were made.
- e) An inter-island information system was initiated with the installation of FAX machines in ORD, St Vincent, BAS, Barbados, STAFCO-OP, St. Lucia and PFU, Grenada.
- f) Based on a project prepared by IICA the Canadian Co-operative Association provided a grant for US\$100,000 to support this multi-national project.



- g) The Project supported the trip of three representatives of Banana Associations and one Ministry of Agriculture representative to visit the Coffee Diversification Project in Colombia to obtain information on diversification. The team prepared a document with guidelines and recommendations for achieving agricultural diversification which was circulated.

**5. PUBLICATIONS GENERATED BY THE PROJECT**

- 1) La Gra, J.L. et al; January, 1989. Profiles of Farmers Organizations in St Lucia. St Lucia, Inter-American Institute for Cooperation on Agriculture. 125 p.
- 2) La Gra, J.L. & Barry Borland; May, 1989. Profiles of Farmers Organizations in Dominica. Dominica, Inter-American Institute for Cooperation on Agriculture. 147 p.
- 3) La Gra, J.L. et al; March, 1989. Experiences in Diversification and their Application to the OECS. St Lucia, Inter-American Institute for Cooperation on Agriculture. 21 p.
- 4) Oechsle, Susan; December, 1989. Guide to Collecting Data for ORD Database. Inter-American Institute for Cooperation on Agriculture. 31 p.
- 5) Oechsle, Susan; December, 1989. Users Manual for the ORD Database. Inter-American Institute for Cooperation on Agriculture. 43 p.
- 6) Oechsle, Susan; December, 1989. Guide to Collecting Data for Egg/Broiler Monitoring Database. Inter-American Institute for Cooperation on Agriculture. 20 p.
- 7) Oechsle, Susan; December, 1989. Users Manual for the Egg/Broiler Monitoring Database. Inter-American Institute for Cooperation on Agriculture. 36 p.
- 8) Oechsle, Susan; December, 1989. Guide to Collecting Data for the Import Substitution Database. Inter-American Institute for Cooperation on Agriculture. 19 p.
- 9) La Gra, J.L. & Barry Borland; December, 1989. Proceedings Round Table Meeting on Organic Farming. Dominica, Inter-American Institute for Cooperation on Agriculture.
- 10) La Gra, J.L. & Barry Borland; December, 1989. Proceedings Organic Farming Workshop. Dominica, Inter-American Institute for Cooperation on Agriculture.





6. PROPOSED ACTIONS FOR 1990

- 1) Development of institutional structure:
  - a) Further support will be provided to the development and strengthening of ISCFO;
  - b) Support will be provided for the development of National Steering Committees in each country;
  - c) Continued assistance will be provided for project identification & formulation;
  
- 2) Development of managerial/administrative capabilities of farmer organizations:
  - a) Accounting/finance management systems will be developed;
  - b) Efforts will be made to assist groups in getting full-time managers;
  - c) Training activities will be executed for managers & staff;
  
- 3) Development of agricultural production information systems:
  - a) Product and country specific databases will be designed;
  - b) Staff will be trained in the use of databases;
  - c) Efforts will be made to promote a multi-national information network;
  - d) A monthly production forecast newsletter will be initiated;
  - e) FOCUS newsletter will be institutionalized;
  
- 4) Identification of niche markets:
  - a) Markets for conventional fresh produce, organic produce and processed agricultural produce will be identified;
  - b) Technical assistance will be provided to develop effective production/marketing programmes;
  
- 5) Development of marketing infrastructure:
  - a) Projects will be identified and formulated;
  - b) Assistance will be provided in project implementation;
  
- 6) Establishment of marketing fund:
  - a) Needs of farmer organizations for operating capital will be determined;
  - b) A project will be formulated to establish fund;
  - c) Technical assistance will be provided for implementation;
  
- 7) Development of livestock sub-sector through farmer organizations:
  - a) Needs will be diagnosed;



- b) Country programs & projects will be designed;
  - c) Technical and financial assistance will be provided;
- 8) Development of small farmer production & marketing capabilities:
- a) Needs for training will be diagnosed;
  - b) Training aids will be prepared;
  - c) Training activities will be organized and executed in production, post-harvest, marketing and management/administration;

## **STRENGTHENING PLANT PROTECTION AND QUARANTINE CAPABILITIES IN THE COUNTRIES OF THE OECS FOR THE PRODUCTION AND MARKETING OF NON-TRADITIONAL CROPS**

### **Background and Justification**

The Governments of the member countries within 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 within the Agricultural Sector. Traditionally, the countries have been dependent upon a narrow range of export crops, bananas, coconuts, cocoa, nutmegs, spices and sugarcane. They have been promoting and developing the production of non-traditional crops (avocadoes, mangoes, breadfruit, passion fruit, plantain, papaya, pineapple, hot peppers, sweet potato and yams, within their overall diversification thrust for export enhancement and import substitution. However, these crops are being produced by a large number of small farmers in small quantities but a significant proportion proving unsuitable for export due to unacceptable and variable quality.

Furthermore, the diversification effort exposes potential economic losses from existing pests. In the case of the non-traditional crops, the threat is even greater as there is limited experience and expertise in the crop protection methodologies of these crops in the islands.

In some countries a number of the current pests have been introduced and with expansion underway there will be increased dissemination. In addition, the countries are exposed to the danger of the introduction of many other serious pests. Therefore, it is necessary to strengthen the countries' plant protection and quarantine capabilities to reduce production/marketing losses, to enhance trade, to prevent the entry of exotic pests and diseases. It is also necessary to improve emergency pest response capability and to avoid the loss of exports

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through any lack of confidence by the importing country in the quarantine services.

Thus, a project was developed which was designed to assist the countries to address the plant protection and quarantine problems related in particular to those commodities forming part of the agricultural diversification effort.

#### Objectives

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

**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 during 1989.

#### Antigua and Barbuda

##### Activities

- Held discussions with MOA on IICA report "Status of Plant Protection and Quarantine in Antigua and Barbuda"
- Organized a one-week workshop on Plant and Animal Quarantine with the MOA for twenty (20) participants including plant quarantine, livestock, extension, public health and traders. The Workshop received Technical support from FAO and USDA/APHIS

#### Dominica

##### III Activities

Improved plant protection practices for farmers:

- made presentations on control of pests and diseases of coconuts to farmers and extension agents during "Coconut Month"
- together with the Pesticides Control Board organized a seminar on Pesticide Management for importers and distributors of pesticides, customs officers and trade unions representatives
- made presentations to extension officers on common problems encountered in plant protection and quarantine



- organized series of Plant Health Clinics with MOA and CARDI technicians
- made forty-one (41) individual farm visits to provide diagnostic and advisory services
- visited each agricultural station routinely to monitor crop protection activities.

Improved mechanism for transfer of information to farmers:

- participated in video production for the Coffee Development Project
- assisted the MOA with the production of two information packages: Hot Pepper Production and A tech-pak for Ginger Production
- with assistance from the MOA, commenced production of a video on Safe and Effective Use and Management of Pesticides
- commended a Plant Protection corner on the weekly radio programme of the MOA
- developing a computer-based national crop protection and quarantine data base
- contributed to the MOA newsletter

Improved plant quarantine service

- coordinated meetings between Customs and Plant Quarantine to discuss ways of improving the plant quarantine services at the ports of entry
- produced a draft Plant Import Schedule for discussion by Customs and Plant Quarantine then for use by officers of these two services
- assisted with supervision of the Fruit Fly Survey and Detection project
- provided technical assistance to the Dominica Hucksters Association

Coordination and collaboration with other Institutions

Liaised and worked with, in various ways, the following institutions:

- Ministry of Agriculture
- CARDI
- Pesticides Control Board
- ACT (Association for Caribbean Transformation)

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- DEXIA (Dominica Export/Import Agency)
- DHA (Dominica Hucksters Association)
- FAO
- USDA/APHIS

## **Grenada**

During the period under review, a minimum of 26 persons were trained in various aspects of plant protection. Farm visits were made to diagnose pest problems and advise on control measures. During these visits, informal on the farm training sessions were held for farmers and field officers.

A training workshop in quarantine for plant protection/quarantine Officers, Customs, Animal Health persons and Officers of Commodity Associations was held in collaboration with FAO and USDA under the distinguished patronage of the Hon Minister of Agriculture, Ben Jones.

The project facilitated the training of the Pest Management Officer in papaya production in Barbados.

Information on Erwinia disease of papaya was sent to the Pest Management Officer. Discussions were held on the rehabilitation of the germplasm bank and the improvement of nursery management was monitored at the Plant Protection Station at Mirabeau.

A survey to determine the incidence of virus disease in hot peppers was undertaken and information on the disease was provided to the Pest Management Officer and the Project Leader with responsibility for hot peppers.

The Chairman of the Pesticides Control Board attended the meeting of Pesticide Control Boards in Dominica.

## **St Lucia**

During the period under review, a minimum of 395 persons were trained in various aspects of plant protection. Farm visits were made to diagnose pest problems and advise on control measures. During these visits, informal on the farm training sessions were held for farmers and field officers.

The project continued to assist the Pesticides Control Board in its efforts to create awareness and educate the public on, and regulate the use of pesticides. Thus, the project assisted in the training of farmers, field officers, pesticide dealers and students in the safe use of pesticides. During the pesticide awareness month, newspaper articles were published and radio talks were given on various aspects of pesticide use. The main pesticide warehouses

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operated by the St Lucia Banana Growers' Association were visited and recommendations were made on proper storage of pesticides. The Pesticides Inspector participated in the meeting for the Pesticides Control Boards of the OECS held in Dominica.

Assistance was given in the implementation of an experiment for the control of anthracnose in mango. It was found that there was no difference in the number of fruits harvested in the treated trees and those harvested in the untreated trees. This may be attributed to the fact that factors other than anthracnose may contribute to premature fruit drop or that the number of sprays applied may have been insufficient. Assistance was also given with investigations into the mango seed weevil problem. Results indicated that the weevil may not enter fruits smaller than 6cm long and 5cm wide. Also that an accelerated fruit drop problem occurring in the fruits with a yellow discoloration at the distal end although appearing to be physiological is likely to be associated with mango seed weevil.

Information which will assist in the management of sweet potato weevil (Euscepes) was sent to the Ministry of Agriculture.

A survey was conducted to determine the incidence of virus disease in hot peppers and the findings reported.

### **St Vincent and the Grenadines**

During the period under review, a minimum of 268 persons received training in various aspects of plant protection. Farm visits were made to diagnose pest problems and advise on control measures. During these visits, informal on the farm training sessions were held for farmers and field officers.

Training workshops in pesticide management were conducted at which farmers, field officers, teachers and students totalling 123 were trained. Training workshops were also held in the use and maintenance of small volume application equipment for 101 participants. The project assisted in the training of Technical Aids in the Plant Protection Unit and the Tree Crop Project in the diagnosis and control of pest problems of tree crops.

In collaboration with USDA and FAO, the project promoted efforts to establish proper quarantine services in the country and a uniform methodology for small states throughout the OECS. To this end, two training workshops in quarantine were conducted for 37 plant protection/quarantine officers, customs officials and animal health personnel. The quarantine system was examined and recommendations which will lead to an effective system for a small state were made. A quarantine leaflet for travellers was developed in collaboration with the Plant Protection and Animal Health Units.



Information which will assist in the management of sweet potato weevil (Euscepes) was sent to the Ministry of Agriculture.

Assistance was also provided to that Ministry in developing a leaflet on pruning of Mangoes.

The Chairman of the Pesticides Control Board participated in the meeting of Pesticides Control Boards in the OECS, held in Dominica, February 1989.

#### OTHER ACTIVITIES

A seminar on Quarantine Treatments for fresh tropical fruits entering the United States of America was attended in Mexico. Materials from the seminar were distributed to the countries.

Participated in a Conference on Sweet Potato Pest Management held in Miami, Florida. Although the emphasis was Cylas spp. because much more work had been done on this pest, nevertheless some of the management practices developed for cylas are applicable to Euscepes.

Participated in meeting of the team of experts on the suspension of imports of mangoes into Barbados from Dominica and St Lucia. The meeting arrived at some pertinent recommendations which were conveyed to the countries through CARICOM and their respective representatives.

#### PROPOSED ACTIONS FOR 1990

1. Quarantine System
  - Harmonization of plant quarantine procedures in collaboration with FAO and USDA
  - Organize information support from Institutions - UWI, CARDI and other Ministries of Agriculture
    - identification
    - survey methods
  - Regulations developed in all the countries and Plant Import Schedule distributed to Customs, plant quarantine officers, exporters and importers
  - Procedure for handling of germ plasm established in collaboration with FAO
  - Assist the Ministries of Agriculture in organizing workshops for plant quarantine officers, customs and traders



- Early detection/emergency response procedures developed for the pests with major quarantine significance
  - Establishment and support to Plant Quarantine Boards
  - Meeting of Caribbean Plant Protection Directors in St Lucia hosted by Ministry of Agriculture sponsored by CARAPHIN Project - IICA
  - Meeting of OECS Plant Protection Directors in St Lucia sponsored by IICA.
2. Pesticide Safety - Meeting of Pesticide Control Boards of the OECS
    - Provide support to the Pesticides Control Boards in the regulation of pesticides and the training of the public in the safe and effective use of pesticides
  3. Continue the development of an information system in collaboration with Caribbean Animal and Plant Health Information Network (CARAPHIN)
  4. Development of Information packages for priority crops in collaboration with the national Programmes for Technology Generation and Transfer
  5. Support to the Ministries of Agriculture in the training of farmers and field personnel to overcome constraints to the production of priority crops.

#### JOINT ACTIVITIES

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

#### Objectives:

**General:** To establish policies, programs and actions in the agricultural sector and to prevent animal health and plant protection matters from restricting agricultural production and productivity.

**Specific:** To organize and implement an animal health and plant protection information and data monitoring system in the Caribbean which will generate reliable data to improve decision making in the design and execution of projects, programs, policies and guidelines for the defense of and increase in, agricultural production and productivity.





## Activities:

Two officers, one from the Animal Health and one from the Plant Protection Units in each country participated in a two week course on monitoring of pests and diseases of crops and livestock in the Caribbean in Trinidad and Tobago. IICA's national professionals in the OECS area also in attendance.

The first edition of CARAPHIN News was distributed to the countries. This publication provides technical information on a variety of matters related to pest and disease monitoring.

## FRUIT TREE CROP DEVELOPMENT

The OECS enjoys activities promoted under the Fruit Tree Project administered from the Barbados Office. During 1989, this Project was developed into a multinational one and approved for implementation during 1990. This development resulted in some curtailment of funds available to the OECS. Nevertheless, in Grenada IICA developed a Paw-paw Project through HIAMP, the Progressive Farmers Union and the Ministry's technical personnel. Seedlings from various cultivars have been introduced, developed and distributed. The Project receives direct support from a Peace Corps Volunteer assigned in Grenada with impressive success to date. The activity is managed by a technical Committee chaired by the Ministry's Fruit Crop Technical officer with the participation of CARDI.

Fruit Tree Crop development activity was initiated in Antigua and Barbuda especially for paw-paw production in collaboration with the Cooperative Farmers Association. Hurricane Hugo subsequently devastated plots but replacement seeds have been provided.

Training courses in fruit and vegetable production have been held in country as well as in Barbados for technical personnel from Antigua and Barbuda, Dominica, and St Vincent and the Grenadines. Participants from IICA's Member Countries in the OECS were sponsored at the international workshop on CARAMBOLA held in Guyana.

The Fruit Tree Crop Specialist formed part of IICA's multidisciplinary Team in support of the Reviews of Agricultural Sector Assessments for Project Identification in St Vincent and the Grenadines and Antigua and Barbuda.



## **PROJECT UNIT**

Continued support was received from the Project Unit in Barbados, primarily building upon previous initiatives to strengthen planning units in the Ministries of Agriculture.

A macro-economic data base has been established in the Planning Unit, Ministry of Agriculture, St Lucia which also monitors production and marketing data for several commodities. Monitoring and evaluation systems will be strengthened as policy analysis capability is developed.

The project unit promoted acquisition of a Bernoulli Box for increased data storage.

The Unit specifically responded to a request from the Ministry of Agriculture in St Lucia for the compilation of a feasibility proposal for the Coconut Rehabilitation Programme. The proposal was based on the outcome of a workshop sponsored by the Ministry of Agriculture. A small technical team is now completing the proposal for donor agency funding.

In Grenada, a workshop sponsored by their Planning Unit was attended and presentations made on Monitoring and Evaluation. Prioritization of commodity projects and formulation of work programmes for the functional organization of the Ministries of Agriculture in Grenada, have received emphasis and support through the multinational project for technology generation and transfer in collaboration with the Planning Unit.

## **INTERIM MANAGEMENT OF THE AMBLYOMMA VARIEGATUM TICK**

In Dominica, *Amblyomma variegatum* was first detected in November 1983 in the South Central village of Belle Vue Chopin. An area of ten square miles was brought under quarantine and the livestock population treated with Armitraz (Tak-tic) at fortnightly intervals between 1984 and 1986. Since September 1985, the tick has not been detected in the Belle Vue Chopin Area. The activity was conducted by two animal health technicians under the supervision of the Veterinary Services Division. Support was provided by IICA totalling over US\$10,000.

In November 1986, *Amblyomma variegatum* was confirmed in the Woodford Hill area in the North East of Dominica. An immediate survey revealed eleven (11) premises to be infested and an area from the Hampstead River in the North to the Tweed River in the South was placed under quarantine. An eradication programme began with emergency funding of \$US30,000 provided by IICA in support of the Ministry of Agriculture's efforts. An Animal Health Assistant



and six (6) field technicians were assigned full time. The Veterinary Officer and the IICA Office Coordinator provided overall supervision and administration. The pour-on acaricide flumethrin (Bayticol) was chosen and all ruminants and dogs were examined and treated regularly on a monthly basis. Animals on infested premises within the quarantine area were treated every fortnight.

The quarantine area was extended when a case of tick associated Dermatophilosis was confirmed in Melville Hall near the boundary.

The Ministry of Agriculture provided additional funds to construct a corral to facilitate examination and treatment of about 250 feral cattle, built by the members of a farmers cooperative with assistance from the Veterinary Peace Corps Volunteer and IICA's national livestock consultant.

The tick was last identified in the Woodford Hill area in August 1987. During 1988 and 1989, activities were continued with a reduced Team of four Technicians. Additional funds US\$15,000 were obtained by IICA's Programme V to enable completion of the campaign.

Direct expenditure for this project is estimated at Ministry of Agriculture \$US40,000 and IICA \$US55,000. A total of 1340 cattle, 819 goats, 722 sheep and 977 dogs were involved initially. These numbers steadily declined in the quarantine area as farmers reduced livestock holdings to concentrate on banana cultivation. Several ruminants were slaughtered.

Cooperation by the farmers in the area was generally good. They were very appreciative of the work of the field team and the improved condition of the livestock. A few complaints have been received concerning a mild dermatitis in sheep, goats and dogs following treatment with Bayticol and injuries to ears caused by identification tags.

A strong call for continued surveillance in the area and island wide was made. During January 1990, a new focus of infestation was discovered in the South of the island at Grand Bay where two cows were found with engorged *Amblyomma* ticks. The Ministry of Agriculture has initiated quarantine and treatment procedures.

In St Lucia, the Veterinary Division of the Ministry of Agriculture continued their Control programme against *Amblyomma* in the North and South Eastern sections of the island. During 1989 spread was reported to the South Western area of Choiseul.

During 1988 new foci were also reported from St Vincent and the Grenadines and Montserrat.



St Lucia received a visit from an USAID evaluation team for the Environmental Protection Agency to observe field practises in the use of Bayticol and farmer responses to its use. A final report was received indicating that Bayticol was not recommended for use by an agency of the USA in support of the pilot project proposed for Antigua and Barbuda awaiting implementation since 1987.

The reported number of new foci of infestation in the Eastern Caribbean, the incrimination of cattle egrets as possible tick vectors as well as illicit movement of livestock, emphasize the need for concerted eradication efforts in the OECS, Dutch and French Islands if the mainland of America is to be kept free of the disastrous effects of the tick, Dermatophilosis and Heartwater Disease of Ruminants.

The call by IICA's Programme V Directorate to re-enthuse the CARICOM Secretariat and FAO to call a donor agency meeting as agreed at their meeting in Barbados during 1987, is highly commended.

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

An IICA multidisciplinary team held follow-up workshops in St Vincent and the Grenadines (November 19-23) and in Antigua and Barbuda (December 5-9) based on the documents "Assessment of the Agricultural Sector for Project Identification". Promoted by the Chief Technical Officers of the Ministries of Agriculture, the Workshops received strong participation from national technical personnel, CARDI, UWI, OAS and representatives of Farmers Organizations.

In St Vincent and the Grenadines, the French and Chinese Technical Missions participated while in Antigua and Barbuda, the workshop enjoyed inputs from personnel of the EDF Livestock Development Project and from an USAID irrigation specialist. The Workshop reports and modified documents will assist preparation of the National Agricultural Sector Plan for St Vincent and the Grenadines while identifying policy measures and projects for consideration and implementation in Antigua and Barbuda. IICA's team included their professional staff in the OECS Offices as well as Dowlat Budhram, Gonzalo Estefanell and Rafael Marte from the Barbados Office.





## **SHORT TERM ACTIVITIES**

### **EMERGENCY MEASURES FOR VEGETABLE PRODUCTION IN ANTIGUA AND BARBUDA**

Following the devastation of vegetable production caused by Hurricane Hugo, the Government of Antigua and Barbuda requested measures to redress this specific area.

A short term action was prepared to provide vegetable seeds for farmers, conduct refresher production courses and establish demonstration units. This emergency action was approved by the Director General and seeds were donated to the Ministry of Agriculture for distribution to farmers in collaboration with the Marketing Corporation and the Extension Division. Activities will continue in support of the Ministry's core project for vegetable production.

### **IMPROVING WATER RESOURCE MANAGEMENT FOR AGRICULTURAL DEVELOPMENT IN GRENADA**

A Project profile was prepared by November 1989 based on recommendations submitted by IICA's Water Resource Management Specialist, Manuel Paulet and consultations held with personnel in the Land Resource Unit of the Ministry of Agriculture. The profile is being reviewed for the consideration of the Government of Grenada to seek funding.

### **VALIDATION OF SHEEP PRODUCTION SYSTEMS IN DOMINICA**

This short term action was completed in 1988. A documented report including recommendations for farmers is awaiting completion in collaboration with the Communications Unit, Ministry of Agriculture, Dominica. The action compared cut and carry and intensive grazing systems with traditional tethering and community grazing systems. The Dominica systems, developed by IICA with the Ministry of Agriculture and CARDI entertained visits from Technical personnel from St Vincent and the Grenadines and Grenada during 1989.

### **OTHER ACTIVITIES**

IICA participated in an export marketing workshop in Grenada sponsored by the Agricultural Rehabilitation and Crop Diversification Project funded by the World Bank which provided an



opportunity to interact with personnel from CATCO and other regional institutions supporting agricultural diversification.

IICA attended the opening ceremony of the International Cocoa Trading Seminar sponsored by the Grenada Cocoa Association (GCA) and the International Trade Centre. National Symposia on June 14 and 15 were also attended. IICA could contribute to development of the islands's cocoa industry through information generated by PROCACAO and from other available expertise.

IICA participated with representatives of the OAS and EEC in an evaluation of CARICOM's activities in Grenada. The closer working relationship engendered by a signed agreement between IICA and CARDI was highlighted. A meeting was also held with CARDI's Communication Specialist, Ms Marjoo and FAO Consultant Fay Durrant on related projects with these institutions.

IICA provided a mounted display at the World Food Day Celebrations highlighting the Institute's contribution to the agricultural sector. Several National field days were also attended.

IICA held discussions with the visiting IFAD mission on July 5th in Grenada and enjoys cordial working relationships with personnel from CARDI, HIAMP, OAS and Technical missions.

A proposal for support to the USAID funded fruit fly surveys in St Lucia and Dominica was discussed with related US officials. The surveys are being conducted by Ministries of Agriculture in the absence of the USAID/USDA Technical Consultant.

Discussions were also held with the Agricultural Officer of the Canadian High Commission on project areas of interest in support of the Agricultural Diversification Programme.

Support was provided to a technical workshop in St Lucia sponsored by the OAS in relation to Land Capability Planning. An overview on Agricultural Planning for the OECS was presented.

The basic country agreement was signed in St Vincent and the Grenadines by the Prime Minister, Hon James Mitchell and the Director General of IICA, Dr Martin Pineiro during a specially arranged visit on 11th August, 1989. Accompanied by the Area Director and Representative, the Director General held discussions with the Minister of Agriculture, Hon Allan Cruickshank, Permanent Secretary and Chief Agricultural Officer in the Ministry, Director OAS, Director CARDI and the Venezuelan Ambassador.

The Government of Antigua and Barbuda has indicated approval of the terms of the basic country agreement and awaits arrangements for the signing.



Thanks to the cooperation of the OAS Offices in St Vincent and the Grenadines and Antigua and Barbuda, Secretary/Coordinators were contracted to support IICA's official duties in those countries.



## 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
- Judith Mann - 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 - Janitor

### DOMINICA

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

### GRENADA

- Cosmos Joseph - Agronomist and Office Coordinator
- Allan Martinson - Peace Corps Volunteer
- Cheri Matthews - Peace Corps Volunteer
- Merril St John - Administrative Technician
- Emery Thorne - Driver/Messenger
- Agnes Williams - Charwoman

### MULTINATIONAL PROJECTS

- Programme I
- Gonzalo Estefanell - Agricultural Economist - Barbados Office
- Programme I
- Dowlat Budhram - Policy Analysis Specialist - Barbados  
Office
- Programme III
- Rafael Marte - Fruit Tree Crop Specialist - Barbados  
Office
- Programme V
- Barry Stemshorn - Regional Veterinary Specialist - Trinidad &  
Tobago Office

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**EXPENDITURE**

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

ADMINISTRATIVE COST

	<u>ALLOCATION (US DOLLARS)</u>	<u>EXPENDITURE</u>
Quota	290,006	277,170.79

TECHNOLOGY GENERATION AND TRANSFER PROJECT

Quota	161,398	151,515.50
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STRENGTHENING FARMERS ORGANIZATIONS

Quota	144,657	147,380.86*
CCA Funds	88,000	60,000

PLANT PROTECTION PROJECT

Quota	97,239	95,968.94
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SUPPORT TO FRUIT PRODUCTION

Quota	20,000	17,540.84
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INTERIM MANAGEMENT OF AMBLYOMMA VARIEGATUM

Quota	15,000	14,973
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EMERGENCY RELIEF FOR VEGETABLE PRODUCTION

Quota	8,500 1/	1,208.37
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<u>TOTAL EXPENDITURE</u>	<u>824,800</u>	<u>765,758.30**</u>
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\* Includes excess charges of \$2855 to 1989 Allocation

\*\* The Institute experienced restrictions on expenditures during the last quarter

1/ Allocation approved for expenditure in 1990









INTER-AMERICAN INSTITUTE FOR COOPERATION ON AGRICULTURE

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