

PD number 104
76969 2/2

TROPRO

**Accomplishments of
TROPICAL PRODUCE SUPPORT PROJECT
(#538-0163)
January 1990 to June 1992**

November 1992

TABLE OF CONTENTS

	PAGE
1 TROPRO: PROJECT OVERVIEW	
Objectives of TROPROG	1
Project Components	2
Types of TROPRO Activities	3
Participating Agencies	5
2 TROPRO: SUMMARY OF ACCOMPLISHMENTS	
Achieving the Objectives of TROPRO	8
Classification of Activities by Objectives	9
Activities by Project Components	10
TROPRO Activities in Participating Countries	12
Training Activities	13
3 TROPRO: TRAINING ACTIVITIES	
Types of Training	17
Numbers Trained	19
Topics of Training	20
Sustainability	22
4 ACTIVITIES CARRIED OUT IN PARTICIPATING COUNTRIES	
Antigua and Barbuda	24
Dominica	25
Grenada	27
St. Kitts-Nevis	28
Saint Lucia	29
St. Vincent and the Grenadines	31

TABLE OF CONTENTS

5 ANNEXES

Annex 1 TROPRO Staff and Supporting Personnel
Annex 2 Activities Data Collection Form
Annex 3 Data Sources
Annex 4 Tables For Summary of Accomplishments
Annex 5: Acronymns

Project Overview

Section 1

Project Overview Introduction and Background to TROPRO

TROPRO: Project Overview

Agricultural diversification has long been a concern of the Governments of the Organisation of Eastern Caribbean States (OECS). The West Indies Tropical Produce Support Project (TROPRO 538-0163), is a complex, five-year, project involving a number of agencies, each targetting a particular aspect of the agricultural diversification problem.

TROPRO will help to achieve agricultural diversification through the export of non-traditional agricultural products.

The Project, which is funded by the United States Agency for International Development (USAID), began in September 1989 as an integral part of the programme of the Organisation of Eastern Caribbean States - Agricultural Diversification Coordinating Unit (OECS-ADCU).

This Report provides a summary of the activities of TROPRO. The report is organized into four sections: this first section introduces the Project, its components and participants; the second section summarizes the main achievements of TROPRO; and the third section focusses on training activities. Section 4 provides an additional annex for each participating country.

Objectives of TROPRO

TROPRO's overall goal is to increase the hard currency foreign exchange earnings of the member countries of the OECS. It will do this by increasing the quantity, and improving the quality, of exports of non-traditional agricultural products to extra-regional markets. In fact, one of its aims is to double the exports of OECS produce by the end of 1993. Achievement of this major goal will result in higher incomes for farmers in the participating countries. The participating countries are: Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Lucia and St. Vincent and the Grenadines.

In order to achieve its goal, TROPRO provides technical assistance, infrastructure development, various goods and services, and institutional support to various agencies. These are provided mainly to the private sector in order to strengthen their capabilities in the production, post-harvest handling, transport and marketing of non-traditional agricultural export products.

Participating Countries

Antigua & Barbuda

Dominica

Grenada

St. Kitts - Nevis

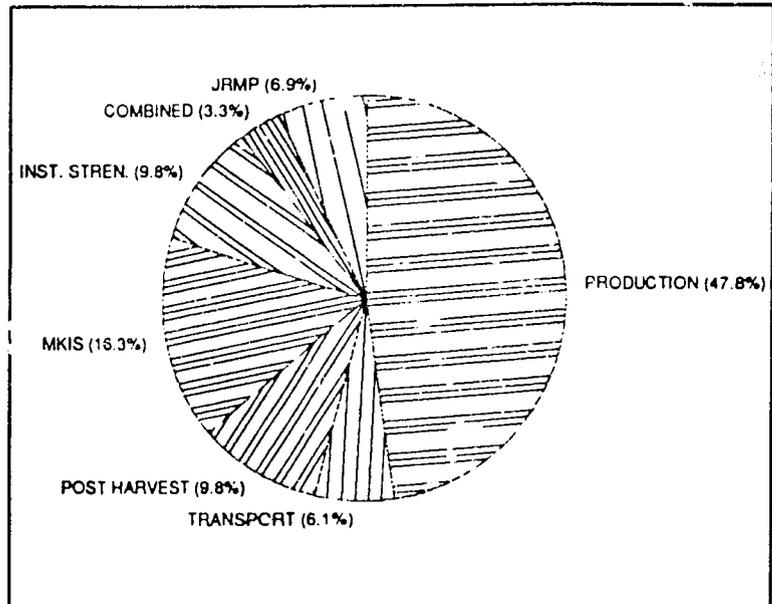
St. Lucia

St. Vincent & The Grenadines

Project Components

TROPRO began by concentrating on four components, each of which addressed the constraints which had been identified as obstacles to the effective extra-regional marketing of fresh produce in its area. The four components or modules of TROPRO are:

Project Components



- **Production:** to increase the quantity and improve the quality of exportable produce. Almost half of the activities that have been implemented were carried out under this component.
- **Post-Harvest Handling:** to improve the sorting, grading, handling, packing, and storage of produce. When the Project began, trial shipments of produce were made under this Project component. But, as a result of TROPRO's experiences, on 1 July 1991, trial shipments were handled by the **Joint Regional Marketing Programme (JRMP)**.
- **Transportation:** to provide a more efficient system of intra-regional transport for exporting produce; and
- **Market Information Systems (MKIS):** to increase the market knowledge and the market contacts of the region's produce exporters.

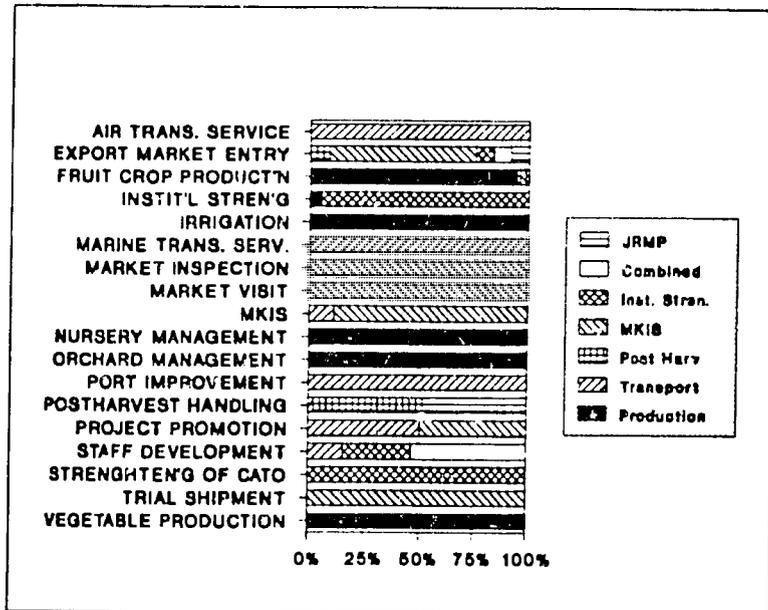
In addition to these substantive areas, TROPRO provides support and inputs for the smooth implementation of the programme. This support focusses on institutional strengthening of the agencies involved with Project Management.

Activities in all these components, although they may be carried out separately as discrete events, work together to achieve the objectives of the project. Thus, effective management of these components and all these activities is an achievement in itself.

Types of TROPRO Activities

The types of activities implemented under TROPRO are many and varied. For the purpose of this report, an activity is defined as an action or series of actions, not connected with the management of the Project, which is carried out to achieve the objectives of the Project.

Types of Activities by Project Component



A workshop or a visit to a trade fair are obviously discrete activities. More difficult to distinguish are actions like pruning, grafting or trial shipments which require a number of repetitions in order to achieve a desired goal. For these types of repetitive actions, several events need to be grouped together to be classified as an activity or accomplishment.

Project Overview

Thus, all of the activities are not "*equal*" in terms of the time, effort and resources spent on them. For example, a one day field visit to a drip irrigation system on a demonstration plot cannot be considered equal to series of negotiations over a period of nine months with an airline to begin a dedicated cargo carrying service for fresh fruit. To attempt to quantify the time, resources and efforts which distinguish between these activities was beyond the scope of this report.

So, for the purposes of this report, both of these activities are defined as accomplishments and have equal weight in that each is counted as one accomplishment or activity (The terms activity and accomplishment are used interchangeably throughout the report). It is particularly important to bear this in mind when the achievements of the various components are compared e.g. production and transportation.

A total of eighteen (18) activities were defined in the following areas:

Air Transport Services	Nursery Management
Export Market Entry	Orchard Management
Fruit Crop Production	Port Improvement
Institutional Strengthening	Postharvest Handling
Irrigation	Project Promotion
Marine Transport Services	Staff Development
Market Inspection	Strengthening of CATCO
Market Visit	Trial Shipment
MKIS	Vegetable Production

As data were collected on the various activities carried out under TROPRO, each was classified into one of these eighteen activity categories. Thus, a workshop on Export Market Requirements for Fruits, Vegetables and Floriculture would be classified under Export Market Entry. But a workshop on the Establishment and Management of Orchard Crops would be classified under Fruit Crop Production. This classification was necessary in order to analyse the number of varied activities carried out under TROPRO.

Participating Agencies

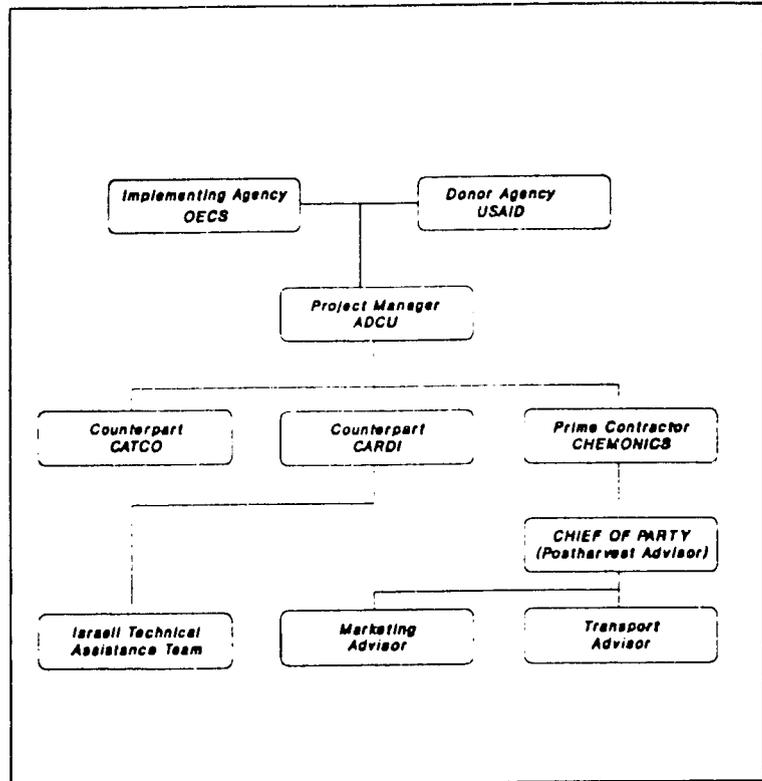
TROPRO is a complex project involving a number of agencies, each targeting a particular aspect of the agricultural diversification problem. By the geographical spread of its offices and expertise, as well as its activities, TROPRO ensures that most of the countries of the OECS benefit directly and immediately from its implementation.

AGENCY	LOCATION	RESPONSIBILITIES
USAID/RDO/C	BARBADOS	Provision of general policy guidance
OECS-ADCU	DOMINICA	Implementation of infrastructure development (Postharvest Handling Module) Implementation of Transport Module Logistical support, overall management, monitoring and evaluation of TROPRO
OECS-EAS	ANTIGUA	Establish statistical base for monitoring agricultural export diversification
CARDI	ST. LUCIA	Implementation, together with the Israeli Technical Assistance team of the Production Support Module Provision of accounting and other services Awareness raising of producers and exporters including training, technical support and agronomic trials Implementation of Mango Improvement Programme and Water Management Programme
CATCO	BARBADOS	Overall responsibility for trading Coordinating of training and information dissemination (Postharvest Handling Module) Training and technical support for improved packing and increased use of refrigerated sea transport Project assistance is provided to strengthen the financial management capacity of CATCO
CHEMONICS TECHNICAL ASSISTANCE TEAM	BARBADOS	Provision of experts: agricultural marketing, transportation and postharvest handling Administer technical assistance contract, corporate policy and logistical coordination
ISRAELI TECHNICAL ASSISTANCE TEAM	ST. VINCENT ANTIGUA ST. LUCIA	Provision of 3 long term advisors under the AID-Cooperative Development Program (930-0185) Technology transfer to farmers, extension workers and technicians

Project Overview

The previous table identifies the agencies and teams responsible for implementing TROPRO, indicates their geographical spread, and lists their responsibilities. The following chart shows the organisational structure by which the Project is managed. The Project Manager, who is also the Coordinator of the ADCU programme, is guided by a TROPRO Management Committee. The main Project staff and support personnel are listed in Annex 1.

TROPRO: Participating Agencies



Summary of Accomplishments

Section 2

Summary of the Accomplishments of TROPRO

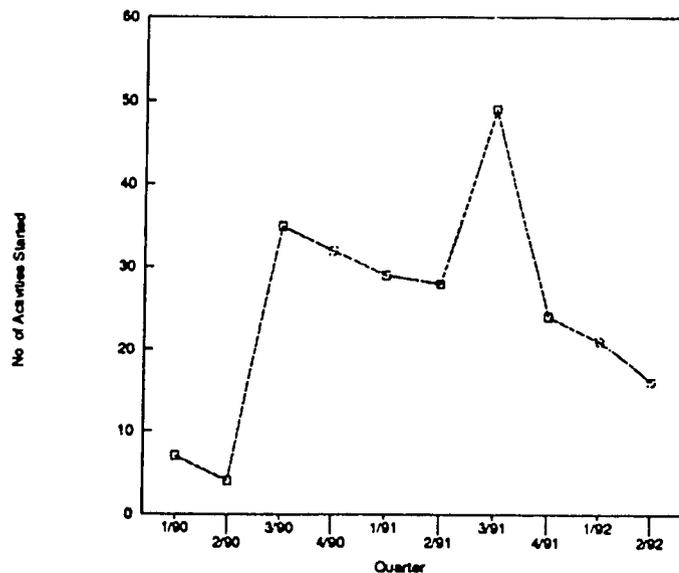
TROPRO: Summary Of Accomplishments

The accomplishments of TROPRO which are presented in this report are based on the definition of types of activities described in Section I. Data were collected on 245 activities which were carried out by TROPRO from 1 January 1990 to 30 June 1992. It is likely, however, that data may not have been collected on some of the activities begun in the last quarter between April and June.

Data for each activity were collected by an Activities Data Collection Form (see Annex 2) which was designed specifically for this task. Using dBASE III Plus, the data have also been entered into a TROPRO data base which should be updated as the project progresses.

Each activity should have a beginning and an end. But it was difficult to find exact dates for most of the activities, some of which took place over weeks and months. Therefore, for this report, activities were dated according to the calendar quarter in which they began. Data on the activities were collected from a number of sources (see Annex 3), beginning with the Project progress reports.

Number of activities started each quarter.



It must be recognized that although many of these activities would continue, they would be recorded only in the quarter in which they began. At first, as the Project got started, the number of new activities begun would be small. As Project staff and technical assistance were recruited, the number of new activities should increase. About midway through the Project, the number of new activities should then level off, and gradually decrease as the Project draws to a close.

Achieving the Objectives of TROPRO

To measure progress, TROPRO formulated a number of indicators which would show the achievement generally, of agricultural diversification and specifically, of the objectives of the Project. The activities were classified according to these indicators. This classification shows, but only to a limited extent given the "inequality" of the activities discussed above, the emphasis in effort and resources devoted to the various objectives of TROPRO.

Half of TROPRO's activities targeted the improved quality of non-traditional crops

TROPRO activities focussed on production activities - activities targetted at the improved quality and timeliness of the production of non-traditional crops. If the "irrigation production" activities are included, almost a half of the total activities can be classified as production activities.

Second, in terms of number of activities, is the "related" category. Although these do not target any specific objective, they are essential not only to the implementation of TROPRO, but perhaps more importantly, to the sustainability of agricultural diversification efforts after the Project ends.

Almost equal in number are the activities directed at increasing the knowledge of grading, packing and handling: postharvest handling activities and trial shipments, including the procurement of packaging equipment and materials. Thus, trial shipments under the Joint Regional Marketing Programme (JRMP) are also aspects of postharvest handling.

Closely related, especially to trial shipments, is the objective of increased knowledge of the European and North American markets. This was also an area of secondary focus in terms of number of activities which targetted that objective.

Classification of Activities by TROPRO Objective

INDICATORS: ACHIEVEMENT OF OBJECTIVES	NUMBER OF ACTIVITIES	%
Increased knowledge of export to North America	8	3
Increased familiarity with European market	14	6
Increased knowledge of export to North American and increased familiarity with European market	10	4
Increased knowledge of grading, packing, handling	42	17
Cooling facilities at sea and air ports	2	0.8
Frequent, reliable inter-island air freight service	3	1.2
Effective transshipment procedures in Antigua, Barbados and Trinidad	2	0.8
Increased use of containers on boats to extra-regional ports	3	1.2
Increased irrigation production of products for export to extra-regional markets	22	9
Improved quality/timeliness of production of non-traditional crops	95	39
Elimination of import duties on packaging materials	0	0
Divestiture of additional CATCO shares	0	0
Activities related, but not specifically targetting any indicator	44	18
TOTAL	245	100

Project Accomplishments

Only a small number of activities have been carried out in the politically sensitive areas

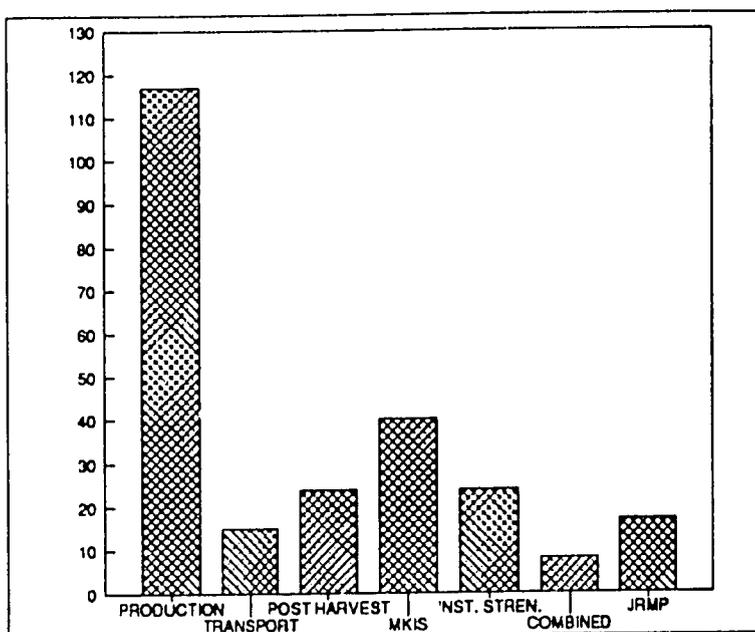
Very noticeable is the small number of activities which have been carried out in the more politically sensitive areas: activities targetting the elimination of import duties on packaging materials, the privatisation of CATCO, frequent and reliable inter-island air freight services and effective transshipment procedures. These are valid Project objectives because they are important to the export thrust targetted by the Project. But they require long and intensive negotiations with a number of interested parties, so progress is slow.

Achievement of agricultural diversification requires efforts in a number of areas, and the objectives of TROPRO indicate these areas. It must always be borne in mind that the activities are not equal in terms of the efforts and resources spent on them. Nevertheless, it is clear that there have been specific emphases during the early phase of the Project in terms of the number of activities carried out to target specific objectives.

Activities by Project Components

Of the total of 245 activities, 117 were carried out under the Production Module. Seventy (70) of these were in fruit crop production and included tasks like pruning, topworking, grafting as well as training in, and demonstrations of, these methods. Twenty (20) were in irrigation including the establishment and management of irrigation systems.

Number of Activities Carried Out Under Each Project Component



Priority Crops

*Avocado
Breadfruit
Dasheen
Eddoes
Ginger
Hot Pepper
Mango
Plantain
Pumpkin
Watermelon*

The emphasis on fruit crop production indicates TROPRO's thrust for extra-regional exports of exotic tropical fruits. The Project named ten priority crops: avocado, breadfruit, dasheen, eddoes, ginger, hot pepper, mango, plantain, pumpkin and watermelon. Of secondary importance are papaya, passion fruit, soursop, coconut and tropical flowers.

Next, in terms of number, was the MKIS Module with 40 activities. Half of these were market contact visits by staff from the Project and Ministries of Agriculture, as well as by growers and exporters to buyers in Europe and the USA. These visits included displays and exhibitions at trade fairs and flower shows. Efforts to get to know the standards of quality required by the export markets and their regulations for entry are also included under this module.

Together, the activities under the Postharvest Module (24) and the JRMP (17) more than equalled the number of activities under MKIS. Under Postharvest would be included any activity related to the more efficient handling, grading, and packing of crops from harvest to the time of shipping.

One activity under JRMP may include 6 trial shipments and 45 inspection services

Under JRMP, TROPRO began a series of commercial size trial shipments of the priority commodities in October 1991. It is important to recognize that one activity under JRMP might include as many as 15 shipments. These shipments incorporate training at all points in the marketing chain, test and upgrade packaging materials, develop sustainable quality control procedures, test and evaluate ocean containers and locker facilities, and demonstrate accounting procedures. An essential characteristic of these shipments are the inspections at destination which evaluate product quality and appearance, type and condition of packaging.

Only 15 activities were included under the Transportation Module. But most of these were in the politically sensitive areas of air and marine transport services and port improvement. This is a critical module but activities require diplomacy and sensitivity in the long process of negotiations involved.

Project Accomplishments

Considerable effort has been put into improving the production, postharvest handling and marketing of the priority crops.

Note should be taken of the number of activities carried out to strengthen the various participating agencies. Although institutional strengthening is not a Project Module *per se*, all other accomplishments would be in vain if the relevant agencies are not effective in carrying out their responsibilities.

Again it must be stressed that the tabulation of the number of activities carried out under each Project component or Module is not a comparison of the work, effort and resources devoted to that Module. Nevertheless, it does seem clear that TROPRO has put considerable effort into improving the quality of the production of the priority crops, as well as into their postharvest handling and marketing.

TROPRO Activities in Participating Countries

TROPRO has attempted, through its geographical spread of offices and expertise, to ensure that all participating countries benefit directly and immediately from its implementation. Therefore, data were collected on the countries in which activities took place. However, there were 37 activities which were not strictly applicable to any country. The majority of these (19) were institutional strengthening activities which related to one or more of the participating agencies, or activities (9) under the MKIS Module.

In order to avoid double counting, any activity which took place in more than one country was classified as a **general** activity. As a result, one third of the activities (82) have been classified as general. The majority of these (25) took place under the MKIS Module and included mainly market contact visits. General activities were also important under the Production, Postharvest and Transport Modules.

Country-specific activities tended to be activities under the Production Module. In fact, only 28 of the 126 country-specific activities were not carried out under the Production Module. Irrigation and nursery management activities were important country-specific activities under this Module, but the majority of activities were in fruit crop production. This was generally true for all participating countries except for Antigua where the profile of activities was a little different. Only in Antigua was vegetable production as important as

fruit crop production, and these activities took place together with activities involving irrigation.

Country-specific activities also tended to take place more often in the countries in which participating agencies or technical assistance team members were located. Fewer activities took place in St. Kitts (6) and Grenada (15), which had no such advantage, compared with St. Vincent (33) and Dominica (28). Generally speaking, however, most participating countries benefited more or less equally from the geographical spread of TROPRO.

Training Activities

Training is a crucial and integral part of TROPRO activities, to the extent that this report includes a special section on training. Therefore, the following paragraphs give only a general overview of training activities carried out under the various project components.

*980 people trained through
TROPRO*

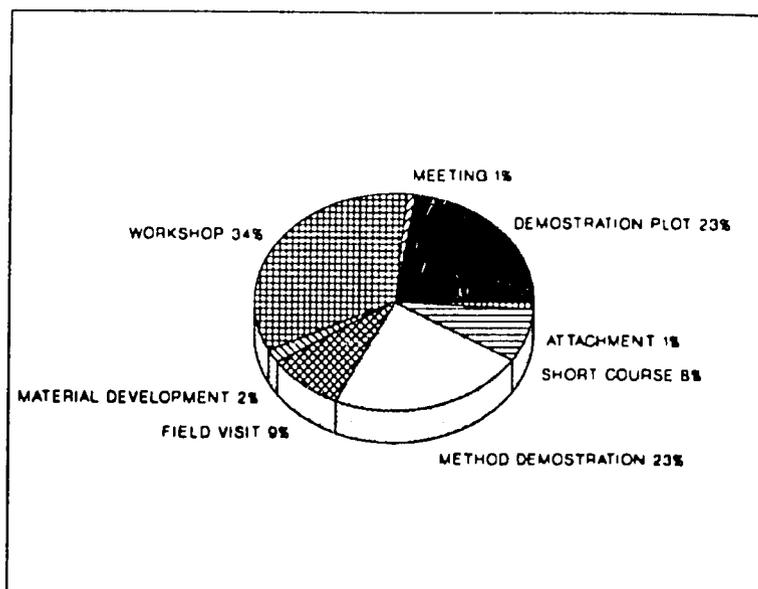
Since January 1990, a total of 980 people have received training through 104 training activities organized or supported by TROPRO - an average of 392 persons in 42 activities per year. Two-thirds of these (653) received training through activities under the Production Module, particularly fruit crop production; fifteen percent (143) through Postharvest activities; and between eight to ten percent through the MKIS and Transport Modules.

As would be expected, training activities reflect the emphasis on production. More than half of the 104 training activities took place through demonstration plots (24), method demonstrations (24) and field visits (9), although there were more workshops (33) than any other single type of training activity. The distinction between the production training activities is fine. Demonstration plots would be established to demonstrate cultivation. Both field visits and method demonstrations would illustrate, for example, irrigation or grafting methods using a demonstration plot.

Project Accomplishments

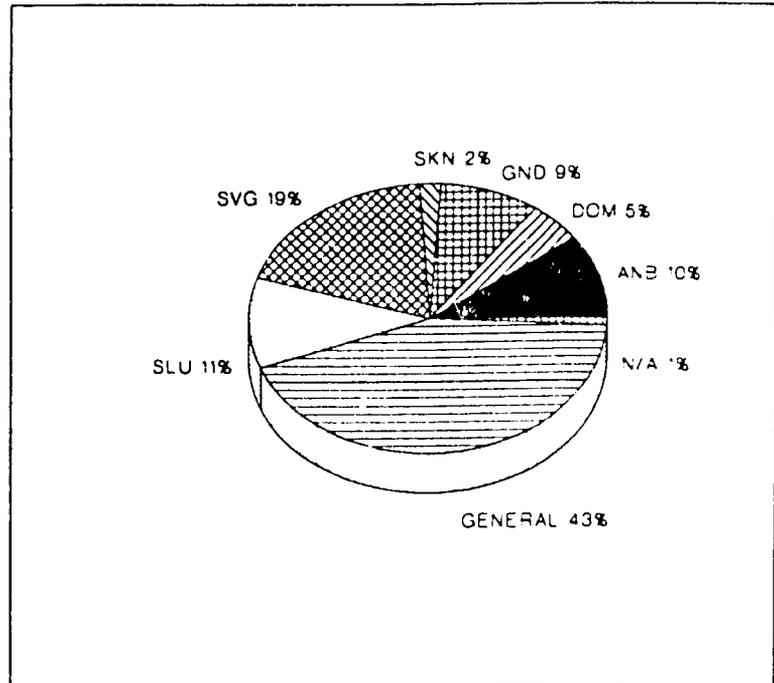
Workshops were also the most effective type of training, in terms of numbers trained: 684 people were trained through workshops, 160 through method demonstrations, 49 through demonstration plots and 46 through field visits. Because of the stratagem to avoid double counting of numbers trained, most of those trained took part in activities which have been classified as general. It is difficult, therefore, to be country-specific about numbers trained. Almost a half of those trained (43 %) have been classified under general. For those for which country-specific data are available, numbers trained per country varied between 53 in Dominica to 188 in St. Vincent, with the exception of St. Kitts-Nevis for which only 17 persons were trained using this classification.

Methods used for Training by TROPRO



The Project attempted to place special emphasis on gender in order to achieve a balance among the males and females participating in the various activities. However, data on training activities did not always specify the gender of the participants. Thus, the gender of a third of those trained (323) is unknown. But of the other two thirds, only twenty-one per cent were females. While TROPRO has been effective in the total numbers trained, clearly much more effort has to be given to encouraging women to attend training activities.

Training opportunities for Participating Countries



The task of data collection for this report on the accomplishments of TROPRO included the need to define an activity, to collect standardised information on that activity, and to enter that information into a database. This procedure was necessary in order that the process may be on-going and that TROPRO personnel may continue to track the Project's progress.

See Annex 4 for quantitative Summary of TROPRO accomplishments

Because of the nature of this task, the information on the activities is basically quantitative and so, therefore, is this Summary of Accomplishments. While a quantitative summary is necessarily limited, especially in its ability to provide qualitative information on the activities, it is nevertheless useful for illustrating the energies invested in the Project as well as in demonstrating the Project's achievements. The tables on which the summary is based are included in Annex 4.

The Summary indicates, in a limited way, the extent to which activities have targetted the Objectives of the Project. It demonstrates clearly the emphasis on improving the production, postharvest handling and marketing of non traditional crops. It also illustrates the large number of persons trained, on a continuing basis during the Project. Weaknesses have

Project Accomplishments

also been identified, and the need for TROPRO to increase its efforts in the training of women and in the politically sensitive areas which the Project has targetted is clear.

Training Activities

Section 3

Training Activities Carried Out under TROPRO

16/11

TROPRO: Training Activities

It is generally agreed that, because of the relatively high costs of agricultural production in the Caribbean, export crops have to be of high quality. While this is true of the traditional exports, it is perhaps even more true of the non-traditional agricultural export crops which generally do not benefit from preferential tariffs. Agricultural diversification must be synonymous with high quality crops.

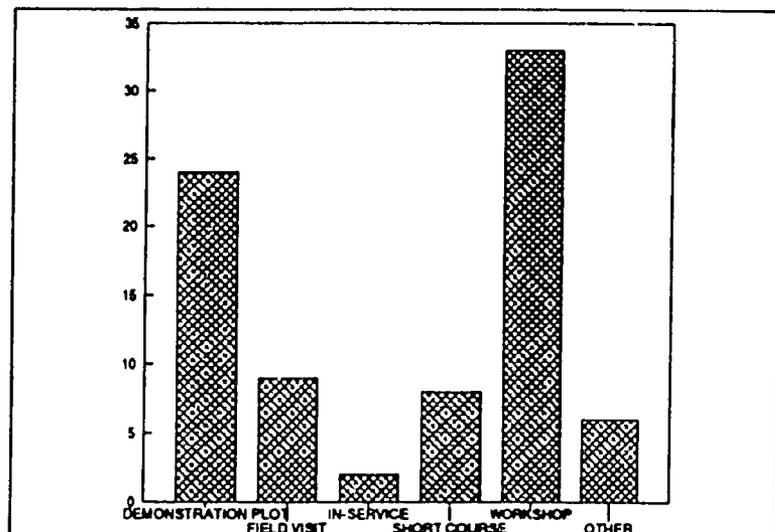
TROPRO targets training through its activities

High, or improved quality can only be obtained through informed and careful handling of the crops at all stages in the production and marketing chain. In recognition of this fact, TROPRO has concentrated much of its time and resources on training, to the extent that 104 of the 245 activities carried out under TROPRO, up to June 1992, involved some aspect of training.

Types of Training

Essentially, TROPRO used five main training methods: workshops, method demonstrations, demonstration plots, short courses and field visits. Three of these training methods (method demonstrations, demonstration plots and field visits) directly target agricultural production. Together these three methods, were used in more than half (57) of the training activities. It is also true that these three training methods are field-bound and therefore tend to be country-specific activities.

TROPRO training methods



Training Activities

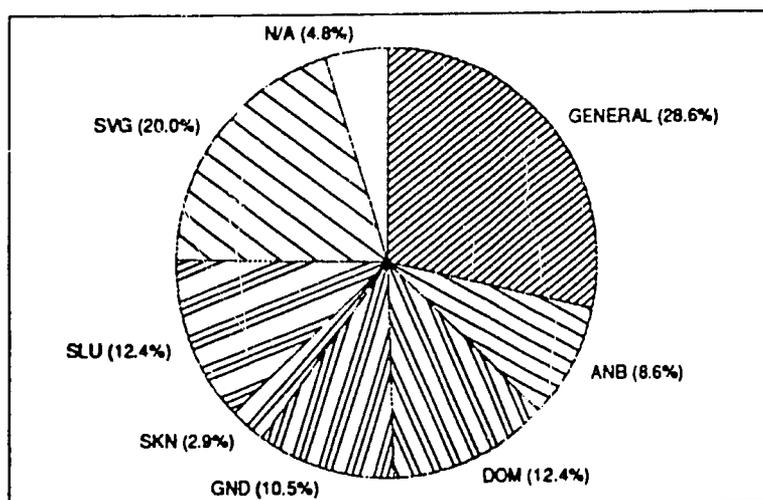
The establishment of a demonstration plot is usually a long process involving the identification or selection of the plot and the farmer, and the preparation of both field and planting material required for the particular demonstration. Once established, the plot could be used for method demonstrations as well as field visits.

Workshops bring trainees from the participating countries together

TROPRO was involved in thirty-three workshops and eight short courses up to June 1992. Only twelve of the workshops were local: confined to participants resident in the country in which the workshop was held. So, under TROPRO, workshops tended to mean regional or subregional workshops with participation from most of the participating countries. Workshops seldom lasted for more than a week, while short courses were usually longer. Other training methods involved in the activities were attachments, in-service training and meetings. But these other methods were used very little by TROPRO, a total of six activities between them.

The field-related training depended heavily on the Israeli Technical Assistance Team. One member of this team is an Irrigation and Water Management Specialist based in Antigua; the other two are Fruit Specialists based in St. Lucia and St. Vincent. Similarly, the short courses also depended heavily on one source: seven of the eight short courses on which data were collected were conducted by CEPAT (Continuing Education Programme in Agricultural Technology) of the Faculty of Agriculture of the University of the West Indies (UWI) in Trinidad. Regional workshops were usually coordinated with other agencies like the Inter-American Institute for Cooperation on Agriculture (IICA), the French Technical Mission, and the Ministries of Agriculture.

National Training Carried Out by TROPRO



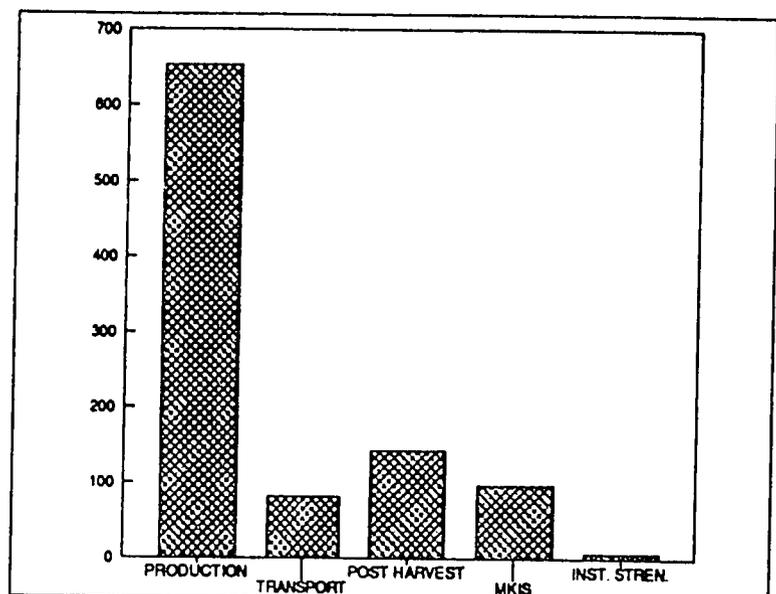
Numbers Trained

Data on the participants in these various training methods were not always available in detail. It should be recognized therefore, that the numbers generated by the database indicate the total numbers who attended the training sessions. But if the same person attended two different training sessions, for instance a short course and a method demonstration, that person would be counted twice. Perhaps it is more useful to think of the numbers generated as opportunities for training, rather than of persons trained.

Impressive number of training opportunities generated by TROPRO

As has already been indicated in the previous section, the number of opportunities for training generated by TROPRO up to June 1992 was impressive: 980 opportunities generated by 104 training activities. The gender of those taking advantage of these opportunities is unknown in 323 cases; of the other cases, only twenty-one opportunities were taken by women. Workshops were the most efficient in terms of the number of training opportunities generated, while demonstration plots and field visits generated the fewest opportunities.

Training by Project Component



For the most part, trainees were drawn from a predictable population: farmers or growers, exporters, extension officers, and staff of agencies like the marketing boards, Ministries of Agriculture, and the farmers' associations, as well as Project staff.

Topics of Training

Production Module leads the way in training

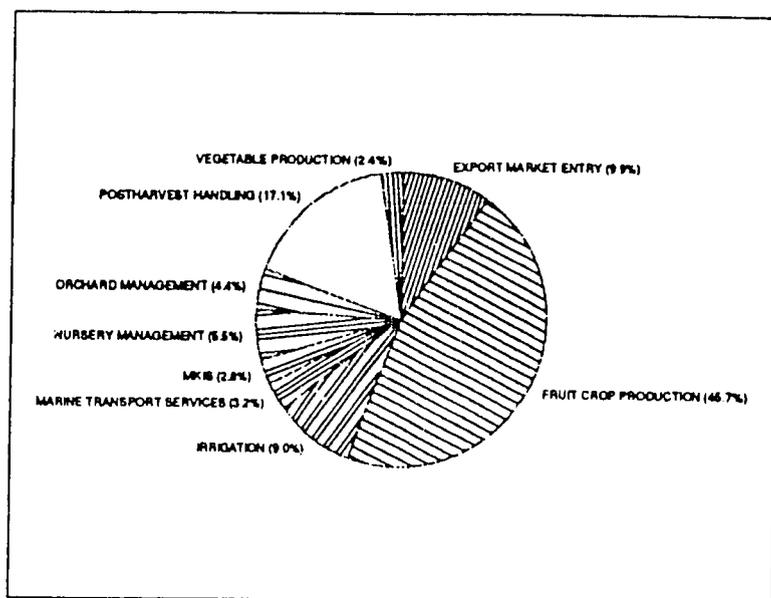
The topics of training reflect the methods of training, in that many of them are field-related. In addition, most of the topics fall under the Production Module so they also reflect the objectives and programmes of that module. Included in the module are the Quality Improvement Programme for Diversified Production, the Mango Improvement Programme, and the Irrigation and Water Management Programme.

The main objective of the Quality Improvement Programme is to increase producer and exporter awareness, appreciation and understanding of the quality standards required for regional exports. The Mango Improvement Programme aims at increasing mango exports to the European and North American markets as a potential "cross-over" commodity. In addition to providing technical assistance and training, the Irrigation and Water Management Programme would also support agronomic trials to develop the technical relationships and information for efficient utilization of scarce water resources.

Number of country-specific activities carried out under the Production Module

The Activities Data Collection Form does allow the collection of some detailed information on the activities. Using only the country-specific information, the data were examined in relation to the three programmes under the Production Module. Only activities which referred to a specific crop, and which were carried out under the Module were examined. Although some of these were not training activities, the majority of the activities examined involved some training aspect. It is also true that a number of the activities involved more than one crop. For instance mangoes and avocados were often linked into one activity. Including these double counts, data were perused on 94 country-specific activities taking place under the Production Module.

National Training Activities



Of the 94 references, 43 referred to general quality improvement, 27 to mangoes and 24 to water management. The references on quality improvement named twelve crops. It was clear that efforts under this programme focussed on the avocado (17 references), in particular the problem of foot rot. Passion fruit and breadfruit were the only other two which received five or more references. Perhaps the most impressive activity here, though not a training activity, was the survey in Dominica of 3,700 avocado trees for the causal organism. These trees covered 70 acres and represented ninety per cent of the total avocado trees in Dominica!

Survey of 3,700 avocado trees

The work on mangoes concentrated on topworking. In fact a Top Working Unit was established at the Ministry of Agriculture in at least one country (Dominica). Irrigation and Water Management activities were more varied, including the installation and maintenance of irrigation systems as well as demonstrations and agronomic trials. What is significant is that ten of the twenty four water activities were carried out in Antigua.

Regional training activities were either workshops or CEPAT short courses. These seemed to target export marketing (Agricultural Marketing and Investment Opportunities, Export Marketing of Fresh Agricultural Produce) just as often as production. Annual workshops have been held on tropical fruit crops as well as on vegetable production. Publications have also been developed and used at these regional training activities, for example the Standards for OECS Target Crops.

Sustainability

An investment in human resource development, through training, is usually an investment in some degree of sustainability. But the likelihood of sustainability increases as the multiplier effect of the training increases. Some of the factors which affect the multiplier effect are numbers trained, continuity of training, and the capability of those trained to train others. Each of these exists to some extent in the training activities carried out under TROPRO.

Training is the key to sustainability

The number of training opportunities generated by the TROPRO activities is impressive and, except for St. Kitts-Nevis and to a lesser extent Dominica, fairly evenly spread among the participating countries. In addition, trainees have come from most of the groups involved in agricultural diversification: growers, exporters, farmers' associations and Ministries of Agriculture. The fact that many of the activities revolve around the demonstration plots, which presumably will be maintained after the Project, is another advantage. The one weakness of this aspect is the small proportion of women who have benefited from the training opportunities under TROPRO.

Israeli Technical Assistance Team carry out local training

The inclusion of extension officers and other personnel from the Ministries of Agriculture among the trainees should ensure that some persons who are capable of training others have been trained. Staff development opportunities for personnel in the participating agencies should also help to ensure sustainability. The data collected on training do not indicate the extent to which, if at all, anyone has been understudying the members of the Israeli Technical Assistance Team who have been responsible for a large amount of the country-specific training activities. If counterparts are being trained, then this would be a further guarantee of sustainability.

It should be noted, however, that most of the training activities have been under the Production Module. Sustainability would therefore be restricted to production activities. But effective diversification requires more than improved production. While it is true that there has been training under the Postharvest Handling, MKIS and Transport Modules, this is to a much lesser extent than in Production. Note that there seems to have been no training under JRMP. To ensure sus-

tainability, TROPRO will need to generate more training activities under the other modules.

Country Activities

Activities Carried Out
in
Participating Countries

Activities Carried Out In Participating Countries

This section presents a summary on the specific activities which were carried out, under TROPRO, in each participating country from January 1990 to June 1992. These country-specific activities represent direct and immediate benefits to the participating country. But, it must also be remembered that the participating countries also benefit from regional and some sub-regional activities. While an overview of these benefits was given in the Summary of Accomplishments, this section tries to detail these for each country.

Project activities were almost equally divided between country-specific activities and other activities. Of the 245 activities on which data were collected, 82 were classified as general, 37 were activities which were not applicable to participating countries, and the remaining 126 (51%) were country-specific activities. However, there was a double count of three activities: one which took place in three countries and two which took place in two countries each, giving a total of 130 activities. These were distributed as follows:

Country	Activities
Antigua and Barbuda	22
Dominica	28
Grenada	15
St. Kitts-Nevis	6
St. Lucia	26
St. Vincent & Grenadines	<u>33</u>
TOTAL	130

The information available from the data base is presented in tabular form for easy reference. Information on the location of TROPRO offices, agencies and staff is also given since this is a definite advantage to any participating country in which they are located.

ANTIGUA AND BARBUDA

Location of:	Irrigation and Water Management Specialist Transportation Specialist	
Number of Activities by Project Component	Production Module	19
	Postharvest Handling Module	2
	JRMP	1
	TOTAL	22
Types of Activities	Project Promotion	1
	Training	9
	Technical Support	8
	Other Activities	4
	TOTAL	22
Areas of Activities	Fruit Crop Production	6
	Vegetable Production	5
	Irrigation	6
	Nursery Management	1
	Postharvest Handling	2
	Project Promotion	1
	Institutional Strengthening	1
	TOTAL	22
Number of Activities In which Equipment was Procured	Pickup (vehicle)	1
	Irrigation Equipment	1
	TOTAL	2
Numbers Trained by Project Component	Production Module 63 M 11 F 21 NS	
Numbers Trained by Training Method	Workshop	74
	Method Demonstration	20
	Demonstration Plot	1
	TOTAL	95
Numbers Trained by Area of Training	Fruit Crop Production	50
	Irrigation	45
	TOTAL	95

DOMINICA

Location of:	ADCU Office TROPRO Project Manager Marketing and Intelligence Officer Agricultural Economist Marketing Specialist	
Number of Activities by Project Component	Production Module Postharvest Handling Module Transportation Module MKIS JRMP TOTAL	20 1 1 1 5 28
Types of Activities	Training Technical Support Infrastructure Market Visit Trial Shipments Other Activities TOTAL	13 4 1 1 5 4 28
Areas of Activities	Fruit Crop Production Irrigation Nursery Management Postharvest Handling Market Visit Port Improvement Trial Shipments TOTAL	14 3 3 1 1 1 5 28
Number of Activities In which Equipment was Procured	Container Irrigation Equipment Chemicals Plastic Strapping Equipment Telescopic Packing Boxes TOTAL	1 2 1 1 1 6

Country Activities

**Numbers Trained by
Project Component**

Production Module 25 M 0 F 28 NS

**Numbers Trained by
Training Method**

Workshop	25
Method Demonstration	2
Demonstration Plot	26
TOTAL	53

**Numbers Trained by
Area of Training**

Fruit Crop Production	51
Irrigation	2
TOTAL	53

GRENADA

Location of: Ministry of Agriculture Liaison Officer

Number of Activities by Project Component

Production Module	14
MKIS	1
TOTAL	15

Types of Activities

Training	11
Technical Support	3
Market Visit	
TOTAL	15

Areas of Activities

Fruit Crop Production	9
Vegetable Production	0
Irrigation	4
Nursery Management	1
Market Visit	1
TOTAL	15

Number of Activities in which Equipment was Procured

Irrigation Equipment	2
TOTAL	2

Numbers Trained by Project Component

Production Module 19 M 1 F 69 NS

Numbers Trained by Training Method

Workshop	24
Method Demonstration	54
Demonstration Plot	10
Field Visit	1
TOTAL	89

Numbers Trained by Area of Training

Fruit Crop Production	52
Irrigation	37
TOTAL	89

ST. KITTS-NEVIS

Number of Activities by Project Component	Production Module	4
	Combined	2
	TOTAL	6
Types of Activities	Project Promotion	1
	Training	3
	Market Visit	1
	Other Activities	1
	TOTAL	6
Areas of Activities	Fruit Crop Production	2
	Irrigation	2
	Project Promotion	2
	TOTAL	6
Number of Activities in which Equipment was Procured	Planting Bags and Seeds	1
	Irrigation Equipment	1
	TOTAL	2
	Numbers Trained by Project Component	Production Module 0 M 0 F 17 NS
Numbers Trained by Training Method	Method Demonstration	4
	Field Visit	13
	TOTAL	17
Numbers Trained by Area of Training	Fruit Crop Production	13
	Irrigation	4
	TOTAL	17

SAINT LUCIA

Location of:	Counterpart Agency: CARDI CARDI Programme Leader CARDI Financial Advisor TROPRO Project Officer Ministry of Agriculture Liaison Office Israeli Fruit Specialist	
Number of Activities by Project Component	Production Module Postharvest Handling Module JRMP MKIS Institutional Strengthening TOTAL	19 3 1 2 1 <hr/> 26
Types of Activities	Field Trial Market Visit Trial Shipments Training Technical Support Other Activities TOTAL	1 1 2 13 7 2 <hr/> 26
Areas of Activities	Fruit Crop Production Irrigation Nursery Management Postharvest Handling Trial Shipment Institutional Strengthening MKIS Market Visit TOTAL	13 1 4 3 1 2 1 1 <hr/> 26
Number of Activities In which Equipment was Procured	Pickup (vehicle) Irrigation Equipment Hot Water Treatment Unit Pineapple Boxes TOTAL	1 1 1 1 <hr/> 4

Country Activities

**Numbers Trained by
Project Component**

Production Module 43 M 10 F 55 NS
MKIS 1 M 0 F 0 NS

**Numbers Trained by
Training Method**

Workshop	53
Method Demonstration	55
Short Course	—
TOTAL	109

**Numbers Trained by
Area of Training**

Fruit Crop Production	76
Nursery Management	32
MKIS	1
TOTAL	109

ST. VINCENT AND THE GRENADINES

Location of:	Marketing Coordinator Israeli Fruit Specialist	
Number of Activities by Project Component	Production Module Postharvest Handling Module JRMP MKIS	5 2
	TOTAL	33
Types of Activities	Trial Shipment Training Technical Support Special Study/Review Other Activities	2 21 7 1 2
	TOTAL	33
Areas of Activities	Fruit Crop Production Vegetable Production Irrigation Nursery Management Orchard Management Postharvest Handling Trial Shipments MKIS Market Visit Institutional Strengthening	16 0 4 3 2 2 3 1 1 1
	TOTAL	33
Number of Activities in which Equipment was Procured	Pickup (vehicle) Container Pruning and Picking Tools	1 1 1
	TOTAL	3
Numbers Trained by Project Component	Production Module 74 M 20 F 69 NS Postharvest Handling 11 M 14 F 00 NS	

ANNEXES

ANNEX 1

Tropro Staff And Support Personnel

Members of TROPRO Management Committee

<i>Collin Bully</i>	Project Manager	Dominica
<i>Albert Merkel</i>	USAID Project manager	Barbados
<i>John Soler</i>	General Manager, CATCO	Barbados
<i>Calixte George</i>	CARDI Representative	Trinidad
<i>Barton Clarke</i>	CARDI Representative	Saint Lucia
<i>Julius Polius</i>	TROPRO Project Officer	Saint Lucia
<i>Steven New</i>	Chemonics/FINTRAC	Barbados

ADCU Staff

<i>Collin Bully</i>	Programme Coordinator and TROPRO Project Manager	Dominica
<i>Andrew Satney</i>	Marketing and Intelligence Officer	Dominica
<i>Charlesworth Tabor</i>	Agricultural Economist	Dominica
<i>Marcus DeFreitas</i>	Marketing Coordinator	St. Vincent
<i>Yolande Magloire</i>	Secretary	Dominica
<i>Petra Ferdinand</i>	Secretary	St. Vincent

CARDI Support Personnel

<i>Calixte George</i>	Executive Director	Trinidad
<i>Barton Clarke</i>	Programme Leader	Saint Lucia
<i>Julius Polius</i>	TROPRO Project Officer	Saint Lucia
<i>Diane Raveneau</i>	Financial Advisor	Saint Lucia

CDB Support Personnel

<i>Errol Berkeley</i>	Project Officer	Barbados
-----------------------	-----------------	----------

CATCO Support Personnel

<i>John Soler</i>	General Manager and Counterpart to Postharvest Consultant	Barbados
<i>Chris Donawa</i>	Marketing Manager	Barbados

MOA Support Personnel

<i>Cecil Winsborrow</i>	Liaison Officer	Grenada
<i>George Alcee</i>	Liaison Officer	Saint Lucia

OECS Support Personnel

<i>George Goodwin</i>	Sector Chief, OECS Secretariat	Antigua
-----------------------	--------------------------------	---------

Consultant Support Personnel

USAID-Israel Cooperative Development Programme

<i>Itzkak Kosto</i>	Fruit Specialist	Saint Lucia
<i>Moshe Kimchi</i>	Fruit Specialist	St. Vincent
<i>Asher Azenkot</i>	Irrigation/Water Manager Specialist	Antigua

Chemonics/FINTRAC Consultants

<i>Steven New</i>	Chief of Party and Postharvest Specialist	Barbados
<i>Walter Tindell</i>	Marketing Specialist	Dominica
<i>Sam Waite</i>	Transportation Specialist	Antigua

ANNEX 3:

Data Sources

ADCU and TROPRO Publications

Annual Reports of the Israeli Technical Assistance Team

CEPAT Training Courses File

Conferences File

David Crucefix: Quality Assessment of Horticultural Produce Received in the United Kingdom, August 1990

David Crucefix: Quality Assessment of Horticultural Produce Received in the United Kingdom, February 1991

IICA File

JRMP file

Market Visits File

NRI Quarterly Quality Assessment Reports

Personal Communication: TROPRO Staff and Consultants

Julius Polius: Interim Report, July-December 1990

Programme Activity Records of the Israeli Technical Assistance Team

Quarterly Reports of the Israeli Technical Assistance Team

Shipping Files

Training Files 1100 and 1102

TROPRO Equipment Purchase Orders

TROPRO Task Orders

TROPRO Quarterly Report Nos. 1

TROPRO Technical, Management and Quarterly Reports Nos. 1, 2, 3, 4, 5, 6, 7, 8 and 9

TROPRO Work Plans and Budgets

Visit and Trip Reports of TROPRO Staff and Consultants

Workshop Files

ANNEX 4

Tables On Which Summary Of Accomplishments Is Based

- 1) TOPIC vs OBJECTIVE CODE
- 2) TOPIC vs PROJECT COMPONENT
- 3) TOPIC vs COUNTRY
- 4) PROJECT COMPONENT vs COUNTRY
- 5) TRAINING: PROJECT COMPONENT by COUNTRY
- 6) TRAINING: TOPIC by COUNTRY
- 7) TRAINING: TOPIC by COUNTRY

NOTE: Tables (3) and (4) show a total of 249 activities because of double counting of 3 activities: one activity includes three countries; while the other two each include two countries.

Topic by Objective Code

99

Topic	Objective Code													Totals
	1	2	3	4	5	6	7	8	9	10	11	12	13	
AIR TRANSPORT SERVICES	0	0	0	1	1	0	0	0	0	0	0	0	0	2
EXPORT MARKET ENTRY	0	0	2	0	0	0	0	0	0	0	0	2	7	11
FRUIT CROP PRODUCTION	0	0	2	0	0	0	0	0	70	0	0	1	0	73
INSTITUTIONAL STRENGTHENING	0	0	0	0	0	0	0	1	0	0	0	18	0	19
IRRIGATION	0	0	0	0	0	0	0	20	0	0	0	0	0	20
MARINE TRANSPORT SERVICES	0	0	0	0	0	0	2	0	0	0	0	2	0	4
MARKET INSPECTION	0	0	1	0	0	0	0	0	0	0	0	0	0	1
MARKET VISIT	5	11	0	0	0	0	0	0	0	0	0	2	1	19
MKIS	2	0	0	0	1	0	0	0	0	0	0	5	1	9
NURSERY MANAGEMENT	0	0	0	0	0	0	0	0	13	0	0	0	0	13
ORCHARD MANAGEMENT	0	0	0	0	0	0	0	0	2	0	0	0	0	2
PORT IMPROVEMENT	0	0	1	1	0	2	0	0	0	0	0	0	0	4
POSTHARVEST HANDLING	0	0	22	0	0	0	0	0	1	0	0	0	0	23
PROJECT PROMOTION	0	0	1	0	1	0	0	0	0	0	0	8	0	10
STAFF DEVELOPMENT	0	0	1	0	0	0	0	0	0	0	0	5	0	6
STRENGTHENING OF CATCO	0	0	0	0	0	0	0	0	0	0	0	1	0	1
TRIAL SHIPMENT	1	3	11	0	0	0	1	0	0	0	0	0	1	17
VEGETABLE PRODUCTION	0	0	1	0	0	0	0	1	9	0	0	0	0	11
Totals	8	14	42	2	3	2	3	22	95	0	0	44	10	245

Topic by Project Component

Topic	Project Component							Totals
	PRODUCTION	TRANSPORT	POST HARVEST	MKIS	INST. STREN.	COMBINED	JRMP	
AIR TRANSPORT SERVICES	0	2	0	0	0	0	0	2
EXPORT MARKET ENTRY	0	0	1	8	1	1	0	11
FRUIT CROP PRODUCTION	70	0	1	2	0	0	0	73
INSTITUTIONAL STRENGTHENING	1	0	0	0	18	0	0	19
IRRIGATION	20	0	0	0	0	0	0	20
MARINE TRANSPORT SERVICES	0	4	0	0	0	0	0	4
MARKET INSPECTION	0	0	0	1	0	0	0	1
MARKET VISIT	0	0	0	19	0	0	0	19
MKIS	0	1	0	8	0	0	0	9
NURSERY MANAGEMENT	13	0	0	0	0	0	0	13
ORCHARD MANAGEMENT	2	0	0	0	0	0	0	2
PORT IMPROVEMENT	0	4	0	0	0	0	0	4
POSTHARVEST HANDLING	0	1	22	0	0	0	0	23
PROJECT PROMOTION	0	1	0	1	0	7	1	10
STAFF DEVELOPMENT	0	2	0	0	4	0	0	6
STRENGTHENING OF CATCO	0	0	0	0	1	0	0	1
TRIAL SHIPMENT	0	0	0	1	0	0	16	17
VEGETABLE PRODUCTION	11	0	0	0	0	0	0	11
Totals	117	15	24	40	24	8	17	245

Topic by Country

-110

Topic	Country								Totals
	General	ANB	DOM	GND	SKN	SLU	SVG	N/A	
AIR TRANSPORT SERVICES	2	0	0	0	0	0	0	0	2
EXPORT MARKET ENTRY	11	0	0	0	0	0	0	0	11
FRUIT CROP PRODUCTION	12	6	14	9	2	13	16	1	73
INSTITUTIONAL STRENGTHENING	1	1	0	0	0	2	1	16	21
IRRIGATION	1	6	3	4	2	1	4	0	21
MARINE TRANSPORT SERVICES	4	0	0	0	0	0	0	0	4
MARKET INSPECTION	0	0	0	0	0	0	0	1	1
MARKET VISIT	11	0	1	1	0	1	1	4	19
MKIS	3	0	0	0	0	1	1	4	9
NURSERY MANAGEMENT	1	1	3	1	0	4	3	0	13
ORCHARD MANAGEMENT	0	0	0	0	0	0	2	0	2
PORT IMPROVEMENT	3	0	1	0	0	0	0	0	4
POSTHARVEST HANDLING	16	2	1	0	0	3	2	0	24
PROJECT PROMOTION	2	1	0	0	2	0	0	5	10
STAFF DEVELOPMENT	1	0	0	0	0	0	0	5	6
STRENGTHENING OF CATCO	1	0	0	0	0	0	0	0	1
TRIAL SHIPMENT	7	0	5	0	0	1	3	1	17
VEGETABLE PRODUCTION	6	5	0	0	0	0	0	0	11
Totals	82	22	28	15	6	26	33	37	249

Project Component by Country

Project Component	Country							Totals	
	GENERAL	ANB	DOM	GND	SKN	SLU	SVG		N/A
PRODUCTION	18	19	20	14	4	19	26	0	120
TRANSPORT	10	0	1	0	0	0	0	4	15
POST HARVEST	16	2	1	0	0	3	2	1	25
MKIS	25	0	1	1	0	2	2	9	40
INST. STREN.	4	0	0	0	0	1	0	19	24
COMBINED	3	0	0	0	2	0	0	3	8
JRMP	6	1	5	0	0	1	3	1	17
Totals	82	22	28	15	6	26	33	37	249

Training: Project Component by Country

Project Component	Country								Total
	GENERAL	ANB	DOM	GND	SKN	SLU	SVG	N/A	
PRODUCTION	128	95	53	89	17	108	163	0	653
TRANSPORT	81	0	0	0	0	0	0	0	81
POST HARVEST	118	0	0	0	0	0	25	0	143
MKIS	95	0	0	0	0	1	0	0	96
INST. STREN.	2	0	0	0	0	0	0	5	7
COMBINED	0	0	0	0	0	0	0	0	0
JRMP	0	0	0	0	0	0	0	0	0
Totals	424	95	53	89	17	109	188	5	980

Training: Topic by Country

43-

Topic	Country																Totals			
	GENERAL		ANB		DOM		GND		SKN		SLU		SVG		N/A		M	F		
	M	F	M	F	M	F	M	F	M	F	M	F	M	F						
EXPORT MARKET ENTRY	59	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	11
FRUIT CROP PRODUCTION	55	16	41	8	25	0	19	1	0	0	43	10	44	14	0	0	0	0	227	49
INSTITUTIONAL STRENGTHENING	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IRRIGATION	0	0	22	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	3
MARINE TRANSPORT SERVICES	29	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	2
MKIS	22	4	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	23	4
NURSERY MANAGEMENT	3	1	0	0	0	0	0	0	0	0	0	0	15	3	0	0	0	0	18	4
ORCHARD MANAGEMENT	0	0	0	0	0	0	0	0	0	0	0	0	15	3	0	0	0	0	15	3
POSTHARVEST HANDLING	101	37	0	0	0	0	0	0	0	0	0	0	11	14	0	0	0	0	112	51
PROJECT PROMOTION	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STAFF DEVELOPMENT	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	2	4	
VEGETABLE PRODUCTION	15	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	4
Totals	285	75	63	11	25	0	19	1	0	0	44	10	85	34	1	4	522	135		

ANNEX 5 :

Acronyms

ADCU	Agricultural Diversification Coordination Unit
CARDI	Caribbean Agricultural Research and Development Institute
CATCO	Caribbean Agricultural Trading Company
CDB	Caribbean Development Bank
CEPAT	Continuing Education Programme in Agricultural Technology
EAS	Economic Affairs Secretariat
OECS	Organisation of Eastern Caribbean States
IICA	Inter-American Institute for Cooperation on Agriculture
JRMP	Joint Regional Marketing Programme
MKIS	Market Information Systems
NRI	Natural Resources Institute
TROPRO	Tropical Produce Support Project
USAID	United States Agency for International Development
UWI	University of the West Indies

Training: Topic by Country

45

Topic	Country								Total
	GENERAL	ANB	DOM	GND	SKN	SLU	SVG	N/A	
EXPORT MARKET ENTRY	96	0	0	0	0	0	0	0	96
FRUIT CROP PRODUCTION	101	50	51	52	13	76	102	0	445
INSTITUTIONAL STRENGTHENING	0	0	0	0	0	0	0	0	0
IRRIGATION	0	45	2	37	4	0	0	0	88
MARINE TRANSPORT SERVICES	31	0	0	0	0	0	0	0	31
MKIS	26	0	0	0	0	1	0	0	27
NURSERY MANAGEMENT	4	0	0	0	0	32	18	0	54
ORCHARD MANAGEMENT	0	0	0	0	0	0	43	0	43
POSTHARVEST HANDLING	142	0	0	0	0	0	25	0	167
PROJECT PROMOTION	0	0	0	0	0	0	0	0	0
STAFF DEVELOPMENT	1	0	0	0	0	0	0	5	6
VEGETABLE PRODUCTION	23	0	0	0	0	0	0	0	23
Totals	424	95	53	89	17	109	188	5	980

**Report on the Accomplishments of
Tropical Produce Support Project (#538-0163)
Jan 1990 - June 1992**

Acknowledgements

Data collection form and Survey: *Dawn Marshall*

Database design and management: *Robin Marshall-Harris*

Data entry: *Sam Kaharabata*

Document written by: *Dawn Marshall*

Document layout and DTP by: *Computer Access,
Barbados*

General assistance and guidance: *Steven New
and Susan Bain,
Chemonics Technical
Assistance Team,
Barbados*

Funding by: *USAID - funded
TROPRO Project*