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LATIN AMERICAN AND CARIBBEAN
AGRICULTURE AND RURAL DEVELOPMENT TECHNICAL SERVICES PROJECT

# AN ASSESSMENT OF HUMAN RESOURCE DEVELOPMENT TRAINING NEEDS IN THE EASTERN CARIBBEAN AGRICULTURAL SECTOR

SUBMITTED TO:

Office of Agriculture and Rural Development
Regional Development Office for the Caribbean (RDO/C)
Bridgetown, Barbados

SUBMITTED BY:

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THROUGH:

Division of Rural Development
Office of Development Resources
Bureau for Latin America and the Caribbean
U.S. Agency for International Development
Washington, D.C.

June 27, 1991

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# ACRONYMS

| | |
|---|---|
| ADCU | Agricultural Diversification Co-ordinating Unit |
| ASDN | Agriculture, Rural Development, and Nutrition |
| AREP | Agricultural Research and Extension Project |
| CARDI | Caribbean Agricultural Research and Development Insitute |
| CARICO | Caribbean Community |
| CATCO | Caribbean Agricultural Trading Company |
| CEPAT | Continuing Education Programme in Agricultural Technology |
| EC | Eastern Caribbean |
| ECAP | Eastern Caribbean Agricultural Policy Project |
| ECLAC | Economic Commission for Latin America and the Caribbean |
| ENCORE | Environmental and Coastal Resources Project |
| FX | Foreign Exchange |
| HRD | Human Resource Development |
| IARC | International Agricultural Research Center |
| IICA | Inter-American Institute for Cooperation in Agriculture |
| LAC TECH | Latin American and Caribbean Agriculture and Rural Development Technical Services Project |
| LC | Local Currency |
| MOA | Ministry of Agriculture |
| NGO | Non-Government Organization |
| NTAE | Non-Traditional Agricultural Export |
| OECS | Organisation of Eastern Caribbean States |
| PP | Project Paper |
| PVO | Private Voluntary Organization |
| RAECC | Regional Agricultural Extension Coordinating Committee |
| RDO/C | Regional Development Office for the Caribbean |
| RECU | Regional Extension Communications Unit |
| SCMA | Standing Committee of Ministers Responsible for Agriculture |
| SOW | Scope of Work |
| TG&T | Technology Generation and Transfer |
| TROPRO | West Indies Tropical Produce Support Project |
| USDA | United States Department of Agriculture |
| UWI | University of the West Indies |

# EXECUTIVE SUMMARY

## I. Introduction

This report was prepared in response to a request by USAID's Regional Development Office for the Caribbean (RDO/C) for an assessment of human resource development (HRD) training needs in the Eastern Caribbean (EC) agricultural sector. For this assessment, the Mission provided the following Scope of Work (SOW):

- To review major project documents to identify and aggregate types of training already programmed and funded;
- To interview principal counterparts to identify areas of HRD which are not covered by RDO/C projects or other donors;
- To identify critical HRD needs by area and suggest possible training programs and courses to meet these needs; and
- To develop criteria for selecting participants to be financed by ARDN contributions to RDO/C training projects.

To carry out this SOW during a relatively short period (June 16-27), the author conducted a rapid appraisal assessment, visiting Barbados to interact with RDO/C staff and review project-related documents as well as the countries of St. Lucia, Trinidad, and Dominica to interview project-level counterparts regarding HRD training needs. Annex A lists the persons contacted.

This report seeks to provide the Mission with background on HRD training needs in the Eastern Caribbean agricultural sector, and guidance on how training resources could be most productively invested in HRD training to support accelerated agricultural economic growth in the region. It is recognized, given the limited time available for the assessment, that the report cannot provide a definitive basis on which to program RDO/C training resources. However, the intent of the report is to pull together and analyze information on potential HRD training needs in the region and to raise issues that may or will require RDO/C to focus more closely on the role that the Mission's assistance program could or should play in enhancing the contribution that HRD training makes to the economic growth of the Eastern Caribbean agricultural sector.

## II. Overview of Training Components of RDO/C Projects

The Mission has two ongoing and two planned projects which include (or will include) varying amounts and types of training. These projects and their implementing agencies are:

- 538-0164 AREP — Caribbean Agricultural Research and Extension (being implemented by CARDI, UWI, and the MOAs);

- 538-0163 TROPRO West Indies Tropical Produce Support Project (being implemented by OECS, Organization of Eastern Caribbean States);
- 538-0171 ENCORE Environment and Coastal Resources Project (ENCORE) (tentatively to be implemented by OECS); and
- 538-01?? ECAP Eastern Caribbean Agricultural Policy Project (in the concept paper stage).

The training components of the reviewed projects generally are aimed at providing technical skills and knowledge to support project implementation and/or to upgrade the skill levels of counterpart staff (e.g., MOA extension workers). Excepting the longer-term training in the AREP (i.e., 10 one-year Extension Diplomas) and ENCORE (i.e., postgraduate technical training of mid-level professional staff) projects, most training will be provided through short courses, workshops, or in-service training. Generally, the focus of the training is on technical topics related to the production, post-harvest handling, and marketing of the non-traditional crops emphasized by AREP and TROPRO. The range of technical areas that are covered will be broadened under ENCORE and ECAP to include environmental protection, natural resource management, and agricultural policy analysis.

Generally, responsibility for organizing the training lies with the agencies implementing these projects or collaborating intra-regional agencies (e.g., UWI). The training audience is broad, ranging from the staff of public and/or private sector project implementing agencies (e.g., extension workers) to key private sector actors (farmers, farmer organizations, exporters, and others in the production and marketing chain). With ENCORE, the training audience, while including some previously identified groups (e.g., personnel from government agencies), will expand to include private sector representatives from the hotel/tourist industries, participating NGOs, educators, planners, communicators, and technical specialists.

Generally, little to none of the training is directed at providing advanced degree level training (i.e., M.Sc. or Ph.D.), although ECAP likely would include at least M.Sc.-level training in agricultural economics and policy analysis. Generally, all of the projects were designed independently of one another, as also were the training components of the projects. As earlier noted, all of the training is primarily focused on developing technical skills and knowledge deemed essential to support project implementation and, thereby, facilitate achievement of project goals.

None of the training objectives or the overall objectives of these projects is aimed at institutionalizing HRD training capability in the region, to ensure that the skills required at this point will continue to be made available after the projects are completed. In other words, none of these projects addresses the sustainability issue, i.e., how the Eastern Caribbean will be able, beyond the life of the projects reviewed, to continue to supply the trained manpower needed to sustain continued productive investment in agricultural and economic growth in the region into the 21st Century.

## III. Field-Level Perceptions of HRD Training Needs

While many specific training needs were identified by the different persons interviewed (see Section III for the specific identified needs), several common themes began to emerge across the interviews with respect to HRD training needs in the Eastern Caribbean agricultural sector.

First, many of those interviewed noted the need for additional training in the management of projects and/or institutions responsible for managing project implementation.

Second, while some projects (e.g., ENCORE) provide support for advanced degree training to develop specialists in certain areas, the interviewees generally did not perceive a need for large numbers of persons to be trained to advanced (M.Sc. or Ph.D.) degree levels. But many see an urgent need for upgrading the education and training of staff at lower- to middle-level field-level positions (e.g., field extension workers and their supervisors). In some cases, this may require additional coursework to a B.Sc. level or earning a one-year specialized diploma. Alternatively, specialized training needs can be met through a series of short-term training events (i.e., short courses, workshops, and in-service training) coordinated so as to build cumulative knowledge and practical experience.

Third, the broad range of training needs, in terms of the more specialized technical areas referred to by those interviewed as well as by the recent Caribbean Agricultural Training Needs Survey (see Section III.E), is indicative of a basic problem in trying to define HRD training need priorities for the Eastern Caribbean. This problem is that one cannot easily compare apples and oranges, that is, to say that a short course on environmental impact assessment techniques is any more or less important than a short course on post-harvest mango handling techniques. In the same vein, is training farmer organization leaders any more or less urgent than training agricultural policy analysts?

Perhaps more importantly, if RDO/C finds that a training component needs to be included in each agricultural project, is this possibly an indicator that the existing agricultural education system, particularly at the univeristy-level (i.e., the University of the West Indies) is falling short of producing the manpower required to increase agricultural sector productivity? Indeed, in light of the findings and conclusions of the Caribbean Agricultural Training Needs Survey, should RDO/C support for meeting HRD training needs in the Eastern Caribbean be limited to ensuring that individual projects provide the needed long- and/or short-term training opportunities in specialized technical areas, or should the Mission play a more proactive role with respect to providing leadership to mobilize the donors and the public and private sectors to focus on the more basic problem of upgrading the region's HRD education and training capability? The difficulty in answering such questions stems not only from the lack of an overall Mission agricultural education and training strategy for the Eastern Caribbean but also from the lack of a conceptual framework to assess the relative urgency of training needs

## IV. Eastern Caribbean Agricultural Sector HRD Training Needs

One strategic notion that can be utilized as a basis for making decisions about allocating scarce resources for HRD training is to prioritize the training in term of four potential areas of impact on development, taking into account that achievement of some degree of impact in certain areas is essential for creating a more favorable environment for achieving impact in other areas. For example, one priority ranking of HRD training areas would be based on the premise that the existing macroeconomic environment, itself influenced by a government's macroeconomic and sectoral policies, creates a structure of incentives (or disincentives) for private sector investment in agriculture. According to this premise, the macroeconomic and sectoral policies established by a country's government are an essential pre-condition for increased investment in agricultural, one indicator of a vigorous private sector response to the prevailing policy environment.

However, the creation of a set of market-oriented policies is an essential, but not necessarily a sufficient, condition for stimulating a vigorous private sector response. Other conditions also may be required for stimulating the private sector to invest vigorously in agriculture. Such conditions likely would include entrepreneurship and the availability of investment funds. But a key condition likely will be existence of trained manpower having the knowledge and skills to make sound technical and economic investment decisions. If there is only a limited supply of trained manpower, the supply can be increased through HRD training to increase the number of public and private sector persons who have management ability. Here "management ability" is seen as essential for private sector (i.e., for profit) initiatives as well as for the provision of public goods essential for a vigorous and sustainable private sector response.

This management variable applies to both shorter-term "project management" and to longer-term "institution management." As the mix of skills required for "project management" vs. "institution management" can vary significantly, a donor such as A.I.D. potentially is faced with having to make a choice between using scarce HRD training resources for strengthening short-term "project management" (at the risk of neglecting longer-term institutional sustainability) vs. using the same resources for longer-term "institutional strengthening" (i.e., strengthening "institution management" (risking that the human resources available in the short run to support project implementation will not be adequate).

A third priority area for HRD training is technology, that is, the knowledge and skills required to convert inputs into marketable outputs (i.e., goods and services). While this area is heavily emphasized in AREP and TROPRO, a case can be made that "technology" is the least urgent area for development assistance, as long as a country's macroeconomic policy environment places agriculture at a disadvantage. If there are no incentives for investment in agriculture, then the lack of a "vigorous private sector response" will be a function of a lack of demand for productivity-increasing technology, not any lack of supply thereof.

Finally, a fourth essential priority area for a "vigorous private sector response" in the agricultural sector is for the ultimate beneficiary groups (e.g., small farmers vis-a-vis agriculture and natural resources) to achieve an acceptable degree of enlightenment and empowerment. This can be achieved through the development and strengthening of farmer organizations (e.g., producer associations, farmer cooperatives) that assist farmers in overcoming production and marketing constraints that impede affordable access to agri-support factors (i.e., credit, production inputs, and marketing information) that are essential for making sound investments in agricultural production and marketing.

The identified priority areas for HRD training are presented in summary form in Table 1, along with an assessment of the degree to which these areas are not covered by those RDO/C projects reviewed herein. The table also includes reference to the need, identified by the Caribbean Agricultural Training Needs Survey, to reshape the region's agricultural education delivery system. Then Table 2 provides a summary of the kinds of training programs that would address the HRD training needs identified in this report. The proposed training is indicated only in generic, specific, and illustrative terms in order to assist in identifying potential providers who may offer the required training. More advanced or specialized training in priority areas such as agricultural policy analysis, management (e.g., agricultural research resource allocation), and technology (e.g., post-harvest handling and processing) likely will require training outside the region (e.g., in the U.S.) and would provide the additional benefit of exposing training participants to new ways of problem solving (i.e., to get a sense of the U.S. experience).

Table 2 does not address the issue of the need to reshape the Eastern Caribbean's agricultural education delivery system. Of course, this is not an issue that can be addressed piecemeal; as an RDO/C initiative, singularly or preferably in collaboration with other donors, the MOAs, and the private sector, it would require its own project or at least being made a major component of a future Mission project (e.g., ECAP). Such an initiative would require a major long-term commitment (at least 10 years) by all concerned to reshape the system according to a defined set of educational performance standards. In this regard, RDO/C may wish to consider the possibility of making reshaping of the agricultural education system a major topic for policy dialogue with the region's national-level governments.

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Table 1. Priority HRD Training Areas in the Eastern Caribbean and Degree Identified Areas Are Emphasized in RDO/C Projects.

| Priority HRD Training Areas | Degree Emphasized in RDO/C Projects |
|---|---|
| 1. Policy | Weak to None in all but ECAP |
| a. Policy Making | None |
| b. Policy Analysis | Weak (or None) |
| 2. Management | Moderate to Weak |
| a. Project Management | Moderate |
| b. Institution Management | Weak |
| 3. Technology | Strong to Moderate |
| a. Technology Transfer | Moderate |
| b. Technology Generation | Strong |
| 4. Farmer Organization Strengthening | Moderate to Weak |
| a. Empowerment | Weak |
| b. Enlightenment | Moderate |
| 5. Reshaping EC's Agricultural Education System | Weak for education but strong for research(CARDI) and extension (MOAs & UWI) |

Table 2. Training Programs and Courses to Meet Eastern Caribbean HRD Training Needs.

| Generic HRD Training Needs | Specific HRD Training Needs | Illustrative HRD Training Needs by Technical Areas (to emphasize linking training to internships) |
|---|---|---|
| Policy | Policy Decisionmaking<br>Policy Analysis | Agricultural Policy Analysis<br>Environmental Law, Planning, & Impact Assessment<br>Data Bank Development and Utilization<br>"Agriculture and Exporting in Action" Study Tours<br>Policy Analysis and Planning Workshops<br>Computer Literacy |
| Management | Institution Management<br>Project Management | Human Resource Leadership/Management/Administration<br>Program Planning and Evaluation<br>Project Preparation Appraisal<br>Computer Literacy & Proposal Writing<br>Design & Use of Management Information Systems (MIS)<br>Project Evaluation<br>Research Resource Allocation<br>Environmental Resource Management |
| Technology | Technology Generation<br>Technology Transfer | Biotechnology Development Utilization<br>Increasing Productivity/Improving Quality Control<br>Crop Protection and Pesticide Use Management<br>Post-Harvest Handling and Marketing<br>Value-Added Processing / Food Processing Technology<br>Land/Park/Forest/Watershed/Wildlife Management<br>Economics of Agricultural Production, Marketing, and Natural Resources Management<br>Management of Applied/Adaptive Agricultural Research<br>Integrated Communication Methodologies for Technology Transfer & Environmental Protection |
| Farmer Organization Strengthening | Enlightenment<br>Empowerment | Leadership Training for Board Members<br>Organizational Development and Staff Management<br>Cost Effective Servicing & Revenue Generation<br>Deal Making for Export Marketing<br>Managing Small Businesses for Profit<br>Accessing Land Titles, Market Information, Credit, Inputs, and Markets<br>Farm and Home Management Economics (Decisionmaking) |

## V. Criteria for HRD Training Participant Selection

Whether the required HRD training is long-term or short-term, there are key external conditions essential for training effectiveness, while certain key criteria should be followed in selecting candidates for training.

### Essential External Conditions for Training Effectiveness

First, it is assumed that a decision to select a participant for HRD training presupposes that the proposed training is part of a proactive, not a reactive, training plan. In other words, the acquisition of the subject training by the participant should provide him (her) with the knowledge and skills essential for the performance of a key role and/or task essential for achieving a development objective that is being pursued by the project that is funding the training. Persons should be sent for training not because training opportunities are available but rather because acquisition of the subject training is essential for achieving a priority development objective.

Generally, the Mission's modus operandi with respect to the support of training is more reactive than proactive. If establishing a favorable economic and sectoral policy environment is a sine qua non for making significant progress with respect to stimulating a vigorous private sector response, then it follows that a policy-related project initiative such as Eastern Caribbean Agricultural Policy (ECAP) should be the foundation on which the Mission would build its other project initiatives. Yet ECAP is only at the Concept Paper stage, while the Mission is attempting to move ahead on AREP, TROPRO, and ENCORE, the long-term success of which will ultimately depend on whether or not the region has an adequate macroeconomic and sectoral policy environment which, in turn, will depend on having an adequate policy analysis and policy making capability. While training under AREP, TROPRO, and ENCORE has the potential to make significant contributions in the short run, the progress made may not be sustainable in the longer term, given a continuing weakness with respect to the region's policy analysis and policy making capability and the resulting less than favorable environment for investment in agriculture.

In short, these considerations must be taken into account in deciding to what extent and how quickly scarce resources should be invested in training at lower priority HRD training areas such as management, technology, and farmer organization strengthening. Yet the problem is complicated to a certain extent by the fact that, while there is a great deal of interrelationship among the four priority HRD training areas, each of the Mission's projects (AREP, TROPRO, and ENCORE) operates relatively independently, in effect, competing for scarce resources both in the Mission and in the region at large.

Second, it is assumed that, when the period of training has been completed and the individual is ready to apply the training in his (her) job, the following conditions will have been met:

- That the participant, once trained, will return to and, for a reasonable length of time, stay in the job for which he (she) received the training;
- That the participant, on returning to his (her) job, will have the resources needed to apply the acquired training; and
- That the system (e.g., organization) to which the training participant returns will provide a conducive environment for applying the acquired training.

If these conditions are not in place within the organization to which the participant is returning, the participant likely will not be able to apply the acquired training on returning to his or her job and RDO/C's training investment will be lost.

Third, it is assumed that, where additional persons need to be trained beyond those specifically funded for training under an RDO/C project, a system will have been established whereby those persons trained under RDO/C projects themselves become trainers of the additional persons who require training. In other words, to a certain extent, to achieve a multiplier effect and increase the cost effectiveness of training a few under RDO/C-funded projects, the few must be called on to assist in taking on the task of training the many. This will require establishing a strategy for training "training participants" to become "trainers" as well as establishing a system where by such "trainers" can participate in training the larger numbers who require training.

Fourth, and finally, it is assumed that the full training job cannot be done by any one or more donor projects and that the Eastern Caribbean public and private sectors ultimately must take responsibility, preferably sooner than later, for ensuring the development of an agricultural education system responsive to the region's long-term HRD training needs in the agricultural sector.

Criteria for Selecting Candidates for Participant Training

Given that the essential external conditions are (will be) in place, RDO/C and project implementors should assess the extent to which the criteria listed in Table 3 should be taken into account when selecting candidates for participant training. Consideration should be given to appropriate weighting of these criteria, recognizing that appropriate weightings could vary depending on the nature of the subject training.

Table 3. Criteria for Selecting Candidates for HRD Training.

- Prior Education and Training--That the candidate have sufficient prior knowledge, understanding, and/or skills to be able to receive the subject training.
- Prior Work Experience--That the candidate have relevant prior work experience.
- Desire to Apply Training--That the candidate manifest a strong desire to receive the subject training and to apply this training once back on the job.
- Attitude toward Work--That the candidate have a demonstrated record of being a hard worker.
- Interpersonal Relationships--That the candidate have a demonstrated record of being able to work with other people.
- Willingness to Share Learning--That the candidate have a demonstrated willingness to share acquired knowledge and skills with colleagues.
- Leadership Potential--That the candidate have a demonstrated potential for leadership.
- Letters of Reference--That the candidate provide letters of reference from three appropriate sources.

# I. Introduction

## A. Background

This report was prepared in response to a request by USAID's Regional Development Office for the Caribbean (RDO/C) for an assessment of human resource development (HRD) training needs in the Eastern Caribbean (EC) agricultural sector. The EC countries served by RDO/C are Antigua and Barbuda, Dominica, Grenada, Montserrat, St. Kitts-Nevis, St. Lucia, and St. Vincent and the Grenadines. Also, RDO/C funds projects carried out by the Caribbean Agricultural Research and Development Institute (CARDI). Headquartered on the campus of The University of the West Indies (UWI) in Trinidad, CARDI carries out a regional technology generation and transfer (TG&T) program in collaboration with the UWI Department of Agricultural Extension and research and extension workers within the MOAs of the aforementioned EC countries.

The Mission has two ongoing and two planned projects which include (or will include) varying amounts and types of training. These projects and their implementing agencies are:

- 538-0164 AREP — Caribbean Agricultural Research and Extension (CARDI, MOAs, and UWI's Department of Agricultural Extension);
- 538-0163 TROPRO — West Indies Tropical Produce Support Project ( OECS, the Organization of Eastern Caribbean States);
- 538-0171 ENCORE — Environment and Coastal Resources Project (ENCORE) (tentatively, OECS); and
- 538-01?? ECAP — Eastern Caribbean Agricultural Policy Project (in the concept paper stage).

RDO/C recently obligated U.S.$ 200,000 for agricultural sector training. Further, the Mission plans to set aside at least some amount for agricultural training in successive years. This report provides the Mission with background on HRD training needs in the agricultural sector of the Eastern Caribbean as well guidance on how these training resources can be most productively invested in HRD training to support accelerated agricultural economic growth in the region.

## B. Scope of Work

To conduct the assessment, the Mission requested the LAC TECH Agricultural Research, Extension, and Education Advisor:

- To review major project documents to identify and aggregate types of training already programmed and funded;

- To interview principal counterparts to identify areas of HRD which are not covered by RDO/C projects or other donors;

- To identify critical HRD needs by area and suggest possible training programs and courses to meet these needs; and

- To develop criteria for selecting participants to be financed by ARDN contributions to RDO/C training projects.

To carry out this SOW during a relatively short period (June 16-27), the author conducted a rapid appraisal assessment, visiting Barbados to interact with RDO/C staff and review project-related documents as well as the countries of St. Lucia, Trinidad, and Dominica to interview project-level counterparts regarding HRD training needs. Annex A lists the persons contacted.

This report seeks to provide the Mission with background on HRD training needs in the Eastern Caribbean agricultural sector, and guidance on how training resources could be most productively invested in HRD training to support accelerated agricultural economic growth in the region. It is recognized, given the limited time available for the assessment, that the report cannot provide a definitive basis on which to program RDO/C training resources. However, the intent of the report is to pull together and analyze information on potential HRD training needs in the region and to raise issues that may or will require RDO/C to focus more closely on the role that the Mission's assistance program could or should play in enhancing the contribution that HRD training makes to the economic growth of the Eastern Caribbean agricultural sector.

C. Organization of Report

The balance of the report is organized as follows:

- Section II identifies and aggregates types of training already programmed and funded, based on a review of secondary information provided by RDO/C.

- Section III identifies, based on the interviews with project counterparts, HRD training needs not covered by RDO/C projects or other donors.

- Section IV classifies the training needs (identified in the previous section) in terms of critical HRD areas or categories and suggests possible training programs and courses to meet these needs. The analysis developed in this section can be supplemented by more detailed list of educational and training opportunities that can be provided, on Mission requestion by USDA's Technical Inquiry Service. (See Annex B for a draft request.)

- Section V develops criteria for selecting participants for HRD training.

## II. Overview of Training Components of RDO/C Projects

The present section identifies and aggregates types of training already programmed and funded, based on a review of secondary information provided by RDO/C.

### A. Caribbean Agricultural Research & Extension (AREP)

#### 1. Training Component

The purpose of the AREP is "to strengthen the institutional capability of national extension services and regional research and extension organizations to generate, adapt and disseminate continuing streams of improved agricultural technologies for the benefit of farmers of the region."

As noted in the PP, CARDI needs efficient, well-managed research and training facilities strategically located in the OECS to reflect agro-climatic differences in rainfall, soils, and other growing characteristics. The PP notes that the project would provide, among other inputs, funding to establish and/or upgrade modest but suitable training facilities to support the technology generation process at three key locations:

- St. Lucia (research and extension training center);
- Antigua (extension training center for vegetables); and
- St. Vincent (root crop research and extension training center).

As part of AREP's Extension Services Component, the project would provide funds to the University of the West Indies (UWI) for at least 10 extension staff members from OECS countries to complete UWI's one-year Extension Diploma course. UWI, in conjunction with National Extension Services, will program and carry out this at the training at UWI facilities in Trinidad. It is anticipated that participants will complete this one year program in two groups of 5 each beginning in project years two and three.

The project will provide funding to CARDI and UWI for post-graduate level training (equivalent of 6 two-year degree classes) of key research or extension staff, with the possibility that some of the funding would be used for training at international agricultural research centers (IARCs) in topics including farm management, experiment station management, and research design. The 12 person years of post graduate training will be jointly programmed by CARDI and UWI through the mechanism of the Project Management Committee. The majority of training will take place at UWI, Trinidad. Any extra-regional post graduate training will be implemented by CARDI through its host country contract for technical collaboration and commodities.

Also, AREP will provide funds to UWI for costs (travel and per diem) of short-term intra-regional and in-country training through quarterly workshops for front-line extension staff in each participating country. This training will be programmed by CARDI and UWI in the Joint Annual Implementation Plans and carried out by the relevant institution.

2. Financial Plan for Training Component

The PP budgets US$ 746,500 for training and meetings, as follows:

UWI Extension Diploma Course $120,000

Two 1-year diploma courses for 10 OECS staff; courses to be held in project years two and four, each group including five staff.

Post Graduate Training $180,000

12 person years of post graduate training at $15,000 per year; alternately, the funds could be used for UWI one-year M.Sc. courses specializing in crop production, or one-year courses at an IARC or U.S. university.

Workshops & Meetings In-Country $ 42,500

Front line extension training twice each year in seven countries, calculated at $8,500 per year for the full five years of the project.

Multi-Country Workshops

Research and Extension annual meetings, multi-country networks, extension in-service training, special topics extension training, management training for CARDI senior staff and other short-term training at the IARCs.

| | | |
|---|---|---|
| Multi-country networks | | $ 90,000 |
| In-service & other extension training | | $314,000 |
| | $404,000 | |
| TOTAL | $746,500 | |

The PP provides the following plan for financial contributions of the participating agencies:

| Training/Meetings | A.I.D. | CARDI | UWI | OECS | Total |
|---|---|---|---|---|---|
| | | | US$ | | |
| UWI Extension Diploma Course | 120.0 | 10.0 | 40.0 | -- | 170.0 |
| M.Sc. and research courses 229.0 | | 180.0 | 25.0 | 24.0 | -- |
| In-country meetings/workshops | 42.0 | 5.0 | 20.0 | 200.0 | 267.0 |
| Multi-country networks | 90.0 | 50.0 | -- | 100.0 | 240.0 |
| In-service/Other Ext. Training | 314.5 | 10.0 | 16.0 | 100.0 | 440.5 |
| | 746.5 | 100.0 | 100.0 | 400.0 | 1346.5 |

According to the PP's, the following is the distribution of USAID funds to project implementors:

- OECS $514,700
- UWI $ 42,000
- CARDI $190,000

Total $ 746,500

The following summarizes the budgets for training/meetings for CARDI and UWI for the project years 89/90 to 93/94:

| | CARDI | UWI |
|---|---|---|
| | US$ | |
| 89/90 | 57.0 | 89.0 |
| 90/91 | 67.0 | 142.0 |
| 91/92 | 57.0 | 89.0 |
| 92/93 | 47.0 | 106.5 |
| 93/94 | 42.0 | 50.0 |
| Total | 270.0 | 476.5 |

## B. West Indies Tropical Produce Support Project (TROPRO)

TROPRO's purpose is "to increase the regional and local capacity to market non-traditional agricultural products, including post-harvest handling, transport and quality control of exportable production from OECS member states. TROPRO, through the OECS Agricultural Diversification Program Coordinating Unit, the Development Unit of the Caribbean Agricultural Trading Company (CATCO), and CARDI, will provide technical support, training, and infrastructural support to alleviate the constraints that limit the capacity to increase export volumes of quality products.

### 1. Training Component

According to the PP, the project will fund considerable training (10.2% of total funds) to lead to long-term institutional strengthening. Training will come from local sources such as UWI, CATCO, CARDI, and other sources external to the region when needed. The training will be conducted for professionals in workshops and seminars and for field representatives and farmers in the field; it primarily will be oriented toward applied technologies and will be supplemented by information developed in the different modules of the project.

The project is comprised of four components or modules, from the farm level through the marketing chain. Three components (production support, post-harvest handling, and market information system development) include training.

#### a. Production Support

The budgeted amounts below are to cover the following costs of training--travel/per diem of participants and local experts, materials and supplies, and publications.

##### (1) Quality Improvement Program

TROPRO will support approximately three workshops per year at a LOP cost of $225,000. The project will provide, through the commodity development unit of CATCO, technical information, technical support, and training to producer organizations, exporters, and interested public sector extension services for diversified commodities in the following areas:

- Market quality requirements, sorting, and grading.
- Agronomic practices, including pesticide regimes, for meeting quality and phytosanitary standards.
- Harvesting practices and technologies for reducing post harvest loss and crop damage.

- Practices and technologies for washing and drying root crops.
- Packaging standards and technologies.
- Packing plant design and management.
- Irrigation technology and water management practices.
- The functions of customs agents, freight forwarders, brokers, freight consolidators, wholesalers, and terminal markets.

The principal client of the training programs are farmer producer organizations, exporters, and other participants in the production and marketing chain. Where topics are of interest to firms and organizations in all the countries, regional workshops are most appropriate and cost effective. The project will fully fund the training workshops (exclusive of TA costs) during the first 18 months of the project. After that, the client organizations will partially fund the workshops on an increasing basis.

(2) Mango Improvement Program

The project will support approximately two workshops per year at a LOP cost of $150,000. The objective of the training activity is to provide farmers, producer organizations, exporters, and public sector extension services with the technical knowledge required to resolve constraints related to increased production of export quality mangos. Potential training areas include:

- Pre-harvest Anthracnose treatment.
- Post-harvest Anthracnose treatment.
- Control of ripening.
- Quality control.
- Harvesting maturity indices.
- Top working of trees.

Training will be focused on the producing areas of Grenada, St. Vincent, St. Lucia, and Dominica.

(3) Irrigation and Water Management

TROPRO will support approximately two workshops per year at a LOP cost of $135,000. The primary demand for training in this area will be related to vegetable production (peepers, cucumbers, and melons). Training activities will be developed in collaboration with producer organizations to focus on client felt needs. TROPRO's role is to organize appropriate training modules and provide technical support, drawing upon expertise in regional institutions such as CARDI, UWI, and IICA as required. Areas for potential training include:

- Irrigation system design
- Water management practices
- System maintenance
- Establishment of water tariffs and collection and use measurement techniques.

b. Post-Harvest Handling

A total of $303,750 will be provided to CATCO to support training and information dissemination through seminars, workshops, and site visits. The training audience is producer organizations, farmers groups, and exporters. The potential training areas are:

- The need to conduct post harvest operations (sorting, grading, packing) in shaded, cool facilities; utility and means of constructing post-harvest facilities.
- Alternative packhouse systems and technologies (grading tables, washing and drying systems, and ventilation).
- Market required sorting and grading standards.

c. Market Information System Development

A total of $129,000 is allocated for establishing a computerized data base in CATCO and training in its use (approximately two workshops per year in use of the data base). The training audience is producers, producer associations, and exporters. Training is to be provided in the use of computerized commercial data bases to obtain relevant information on prices, quantities, market changes, broker ratings, and shipping services.

## 2. Financial Plan for Training Component

Table 2.1 provides estimates of funding for training from the PP's Illustrative Summary Budget by Module/Activity. However, some of the implied training funding actually are to attributed costs for salaries of training participant (e.g., the LC costs) or other items (e.g., computer systems). The PP's Illustrative Summary Budget by Inputs provides for a training as follows: $147,000 in FX, $385,500 in LC, and a total of $535,500.

Table 2.1. Summary of Training in TROPRO.

| Module / Activity | FX | LC | Sub-Total |
|---|---|---|---|
| **Production Support** | | | |
| Quality Improvement | 45,000 | 180,000 | 225,000 |
| Mango Improvement | 30,000 | 120,000 | 150,000 |
| Irrigation & Water Management | 27,000 | 108,000 | 135,000 |
| **Post-Harvest Handling** | | | |
| Seminars and Workshops | 45,000 | 180,000 | 225,000 |
| Site Visits | 78,750 | 0 | 78,750 |
| **Market Information Systems** (*) | 17,000 | 112,000 | 129,000 |
| TOTAL | 242,750 | 700,000 | 942,750 |

* = includes cost of computer systems

Source: TROPRO Project Paper, Table 3: Illustrative Summary Budget by Module/Activity.

## C. Environment and Coastal Resources Project (ENCORE)

The purpose of ENCORE, currently at the draft Project Paper stage, is "to demonstrate regionally that partnership between public, private and community interests can conserve the natural resource base of small Eastern Caribbean islands."

### 1. Training Component

ENCORE includes two components: (a) regional environmental management and (b) local site management, each having training objectives as follows.

#### a. Regional Environmental Management

The objective of this component is to broaden and strengthen national and regional human resource capabilities in natural resources protection and management by improving technical and academic skills in environmental research, planning, and management. The region has a shortage of technical and managerial capacity in basic environmental areas such as environmental quality monitoring, integrated resource planning and management, policy and administration, resource restoration, and farm chemical management.

ENCORE will improve the administrative competency of the region's public and private natural resource and environmental management institutions, assist national policy makers and government institution's senior staff in developing environmentally sound solutions, and increase the skills of private sector institutions and local community leaders in dealing with natural resource issues. Sustainability of the islands' natural resources also implies sustaining a leadership and knowledge base to pursue environmental concerns on technically sound and economically and socially acceptable terms.

Four categories of training are to be carried out under ENCORE:

- Local and regional seminars, short courses, and workshops of one to five days;
- Short-term technical training for an average of two months in the U.S.;
- Long-term academic education in the region and in the U.S. (M.Sc. two years); and
- Special studies on particular subjects, such as water quality monitoring, arranged as an active program of "hands-on" training with universities or other institutions such as NGO/PVOs.

Table 2.2 presents the PP's illustrative Training Schedule for ENCORE, with the following training activities:

- Long-term Academic: Postgraduate technical training (U.S./ Regional) of mid-level professional staff in such fields as fisheries management, coastal zone management, and terrestrial resources management.

- Short-term Technical: Training and short courses for mid-level technicians in several disciplines. These will include economics, natural resource rehabilitation and protection, forestry, coastal zone management, land management, tourism, etc.

- Seminars, Short Courses, and Workshops: Regional, national, and Local Site training programs will be organized primarily for key personnel from government agencies, private sector representatives from hotels, industry, etc., and the participating NGOs, as well as educators, planners, communicators, and technical specialists. Professional development courses will be oriented to specific subjects such as techniques for social investigation, project evaluation, or environmental impact assessment.

- Graduate Study Grants: Directed as available to increase skill and knowledge for individuals attending local and/or U.S. universities. These studies, related to environmental/natural resource based subjects, will be appropriate to the specific work being undertaken at the Local Sites.

- NGO/PVO Institution-Building Grants: About 10-14 regional and local private sector organizations (NGOs/PVOs) may receive institution-building grants of up to $10,000 to strengthen their capabilities in coastal zone management activities. Grants will be given based on proposals solicited from local NGO/PVOs. Groups with high potential for these grants are likely to be community action committees that are actively involved in local site operations, special interest groups that have a worthy natural resource conservation objective, etc.

The regional training program will be open to select interested OECS residents who are involved in environmental protection activities in the region. All training grants will be administered through a competitive process established by the Project Coordinator, OECS, and RDAC. This will include a system of proposals and reviews leading to the training scholarship award.

Table 2.2. Draft Illustrative Training Schedule for ENCORE.

## TRAINING SCHEDULE *

| Category | FY 91 | | | | FY 92 | | | | FY 93 | | | | FY 94 | | | | FY 95 | | | | FY 96 | | | | FY 97 | | Person Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FY Quarter | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | |
| 1. LONG-TERM (US) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| a. FIRST (1) ** | | | | X | X | X | X | X | X | X | X | | | | | | | | | | | | | | | | 24 |
| b. SECOND (1) | | | | | | | | X | X | X | X | X | X | X | X | | | | | | | | | | | | 24 |
| c. THIRD (1) | | | | | | | | | | | X | X | X | X | X | X | X | X | | | | | | | | | 24 |
| 2. LONG-TERM (REGIONAL) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| a. FIRST (2) | | | X | X | X | X | X | X | X | X | | | | | | | | | | | | | | | | | 48 |
| b. SECOND (2) | | | | | | | X | X | X | X | X | X | X | X | | | | | | | | | | | | | 48 |
| c. THIRD (2) | | | | | | | | | | X | X | X | X | X | X | X | X | X | | | | | | | | | 48 |
| 3. SHORT-TERM (US) (5) | | | | { | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | } | | | | 10 |
| 4. SHORT-TERM (REGIONAL) (8) | | | | { | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | } | | | | 16 |
| 5. SHORT COURSES/WORKSHOPS (REGIONAL) | | { | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | } | | *** |
| 6. SHORT COURSES/WORKSHOPS (LOCAL SITE) | | { | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | } | | *** |
| 8. GRADUATE STUDY GRANTS (18) | | | | { | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | } | | | 216 |
| 7. NGO/PVO GRANTS (14) | | | | { | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | } | | | *** |
| | | | | | | | | | | | | | | | | | | | | | | | | | | TOTAL | 458 |

NOTES:

* ASSUMES THAT PROJECT GRANT AGREEMENT IS SIGNED IN MARCH 1991.

** NUMBERS IN PARENTHESES INDICATE QUANTITIES.

*** TO BE DETERMINED.

b. Local Site Management

The PP states that, in this project component, all aspects of training/retraining, the level of technology being advocated will be aimed at stimulating private sector enterprise. However, the PP does not provide further specification of training needs.

2. Financial Plan for Training Component

A.I.D. grant funds will finance long-term U.S. academic training of 2 years each for 3 participants; long-term regional (UWI) academic training of 2 years each for 6 participants; and short-term U.S. training of two months each for 5 participants. The project also will fund 12 short courses/workshops and regional seminars of 5 days duration for 15 participants and 20 programs of 3 days duration for 15 participants. In addition funds will be provided for 18 graduate study grants of one year duration; and up to 14 small NGO/PVO training sub-grants of $10,000 each. This training fund will be managed by the OECS/NRMU. Guidelines for management of this fund will be established during Year 1 of the project and formalized in a PIL.

Because ENCORE is currently at the draft PP stage, specific data on the projected total amount to be budgeted for the training component are withheld from this report so as not to violate Agency guidelines for integrity of procurement.

D. Eastern Caribbean Agricultural Policy Project (ECAP)

The purpose of ECAP, currently at the Concept Paper stage, is "to improve the decision-making capacity of national governments by providing them with good policy analysis on the probable national and regional impacts of alternative decisions and better information on international conditions which will impinge on the region; to integrate policy reform at the regional level (OECS); and to improve the implementation of their policies."

The ECAP Concept Paper envisions a training component, as follows:

- Regional: Short-term advisory assistance and training that would be provided to a policy analysis group in a regional Institute of Agricultural Policy Analysis; and

- Local: Long-term international training and in-country short courses.

The Concept Paper identifies determination of training needs as one of the anticipated design issues.

## E. Assessment of Training Components of RDO/C Projects

As evidenced by the information presented in the previous sub-sections, the training components of the reviewed projects generally are aimed at providing technical skills and knowledge to support project implementation and/or to upgrade the skill levels of counterpart staff (e.g., MOA extension workers). Excepting the longer-term training in the AREP (i.e., 10 one-year Extension Diplomas) and ENCORE (i.e., postgraduate technical training of mid-level professional staff) projects, most training will be provided through short courses, workshops, or in-service training. Generally, the focus of the training is on technical topics related to the production, post-harvest handling, and marketing of the non-traditional crops emphasized by AREP and TROPRO. The range of technical areas that are covered will be broadened under ENCORE and ECAP to include environmental protection, natural resource management, and agricultural policy analysis.

Generally, responsibility for organizing the training lies with the agencies implementing these projects or collaborating intra-regional agencies (e.g., UWI). The training audience is broad, ranging from the staff of public and/or private sector project implementing agencies (e.g., extension workers) to key private sector actors (farmers, farmer organizations, exporters, and others in the production and marketing chain). With ENCORE, the training audience, while including some previously identified groups (e.g., personnel from government agencies), will expand to include private sector representatives from the hotel/tourist industries, participating NGOs, educators, planners, communicators, and technical specialists.

Generally, little to none of the training is directed at providing advanced degree level training (i.e., M.Sc. or Ph.D.), although ECAP likely would include at least M.Sc.-level training in agricultural economics and policy analysis. Generally, all of the projects were designed independently of one another, as also were the training components of the projects. As earlier noted, all of the training is primarily focused on developing technical skills and knowledge deemed essential to support project implementation and, thereby, facilitate achievement of project goals.

None of the training objectives or the overall objectives of these projects is aimed at institutionalizing HRD training capability in the region, to ensure that the skills required at this point will continue to be made available after the projects are completed. In other words, none of these projects addresses the sustainability issue, i.e., how the Eastern Caribbean will be able, beyond the life of the projects reviewed, to continue to supply the trained manpower needed to sustain continued productive investment in agricultural and economic growth in the region into the 21st Century.

## III. Field-Level Perceptions of HRD Training Needs

This section identifies HRD training needs in the Eastern Caribbean as perceived by those who currently are involved or could be become involved in implementing RDO/C-funded projects. It became apparent in the course of interviewing these persons that the subject being discussed (e.g., HRD training needs) is not one on which most respondents had developed well articulated views. Also, the interviews were conducted on an informal basis, that is, as a conversation without a structured questionnaire. Thus, the interviewee's responses must be viewed in the context of reflecting HRD training needs as they perceived these needs at the time the interviews were conducted, not as HRD training needs based on any more objective or quantitative analysis. The identified HRD training needs are organized in this chapter (sections A-D), in terms of the key RDO/C projects for which the interviewees were identified as actual or potential project counterparts. To supplement the perceptions of those interviewed, section E summarizes findings of the Caribbean Agricultural Training Needs Survey."

## A. Agricultural Research and Extension Project (AREP)

### 1. Ministry of Agriculture, St. Lucia[1]

The perceived short-term training needs are as follows:

- Supervisory staff: Project management, this area being one of the most critical in order to ensure adequate supervision and coordination of project activities); this area seen as including such topics as decision-making, delegation of authority, etc.;
- Field-level staff: Methodologies for transfer of technologies to farmers; and
- Farm-level clientele: Upgrading of the management capacity of farmer organizations and producer associations, including training for both board- and staff-level personnel.

The perceived long-term training needs are:

- Supervisory staff: Training to the B.Sc. level for supervisory staff who have a 2-year diploma (e.g., from Jamaica School of Agriculture), with the objective of improving the administration of extension supervision. This training possibly could be done at UWI but there may be a need for CEPAT to design a special program. The rationale for this additional training is based on the concept that the greater the need to integrate different approaches (e.g., FSR/E, gender issues, natural resources management, etc.), the greater the need for higher-level training to develop the supervisor's capacity to integrate and coordinate.
- Research staff:
  - Training in agricultural policy analysis; the need for enhanced policy analysis capacity also implies the need for improved data base systems;
  - Training in agricultural economics (i.e., production and marketing economics), with practical experience in using different methodologies to compare benefits and costs of alternative technologies; and
  - Training in pesticide use management.

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[1]Based on an interview with David J. Demacque, Director of Agricultural Services, Ministry of Agriculture, Lands, Fisheries, Forestry, and Cooperatives, Castries, St. Lucia, West Indies.

2. Caribbean Agricultural Research & Development Institute

a. Technology Adaptation & Transfer Program[2]

The short-term training needs are:

- Field-level staff: Continued in-service training annually, to provide refresher and update training in agricultural technology and extension methods. For new entry-level extension personnel, an orientation course covering both agriculture and extension, since some new extension agents have only finished high school.

- Supervisory staff: Continued institutional strengthening through in-service training in project and institution management.

The long-term training needs are:

- MOA extension supervisory staff: The MOAs feel that middle-level managers who supervise extension field staff need to have training to the level of a B.Sc. in agriculture (with extension option in the final year) or to obtain the one-year diploma in agricultural extension.

- AREP research staff: Strengthening of technical skills of staff to carry out AREP; current project provides for six post-graduate scholarships, with three used so far (2 M.Sc.'s and 1 Ph.D.). HRD training areas needing greater emphasis are:

    - Long-term training from M.Sc. to Ph.D. level in agricultural economics and opportunity for young economists to interact with a senior economists (e.g., from The University of Florida, Texas A&M University, or North Carolina State University). The training preferably should be done in the U.S. but with the thesis or dissertation research done in the Eastern Caribbean.

    - Training of at least one additional person specialized in tropical fruit.

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[2]Based on an interview with Barton Clarke, Leader, Technology Adaptation & Transfer Program, CARDI, Castries, St. Lucia.

### b. Training Needs as Seen from CARDI Headquarters[3]

This interview brought to light training needs both in the public sector MOAs and in the private sector.

- Public Sector MOAs: Here there is a need for the provision of management training to "technocrats" who have moved up to managerial positions in the MOA extension units. There is a need to strengthen the extension services through a greater focusing and setting of priorities. Also, there is a paucity of skills in the management of research programs.

- Private Sector: Here there is a need to stimulate development of training and technical assistance enterprises from which farmers can meet their technical and market information requirements. Such information and training in the effective use of this information will be essential in helping farmers to learn how to be manage their farms.

### c. Regional Agricultural Coordination Committee (RAECC)

A summary of recommendations (R) and suggested actions (SA) regarding training needs as identified by the Regional Agricultural Extension Coordination Committee (RAECC) (RAECC, 1990) is presented in Box 4.1.

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[3]Based on an interview with Samsundar Parasram, Director, Special Services, and Richard A. Brittaine, Technology Transfer Coordinator, Caribbean Agricultural Research and Development Institute, UWI Campus, Trinidad

Box 4.1. Recommendations and Suggested Actions Regarding HRD Training Needs for Agricultural Research and Extension in the Eastern Caribbean (RAECC, 1990).

- R: Extension should become involved in advising farmers on the situation existing in domestic, regional and international markets. SA: MOA to examine the possibility of Extension providing such information and to look at training and support needed. UWI to assist in organizing training in collaboration with other agencies.

- R: Special training should be provided for Extension Officers in gender and family related issues. SA: To organize/provide further formal and non-formal training on gender and family-related issues in collaboration with other agencies.

- R: Strategies to promote greater involvement of youth in agriculture should be developed and implemented. Special attention should be paid to training in agricultural science and technology. SA: MOA and UWI in collaboration with other agencies to develop and implement appropriate strategies.

- R: In order to enhance their professional development, the skills of extension field staff should be upgraded on a continuous basis. Appropriate training opportunities should be provided which all levels of staff can access. SA: UWI in collaboration with other agencies to examine possibilities of further extension training through formal program and short courses, etc.

- R: All researchers involved in Research and Development work should have basic skills in extension methodologies and thus, they should be included in relevant extension training activities. SA: To implement as far as possible.

- R: WINBAN and other commodity organizations should be represented in communication training exercises sponsored by UWI's Regional Extension Communications Unit (RECU). SA: To implement as far as possible.

- R: Extension Officers and Research and Development staff should have basic training in communications. SA: To implement as soon as possible.

3. The University of the West Indies

a. Department of Agricultural Extension[4]

Several short-term training needs were identified as follows:

- Training in communications, in order to upgrade the quality of teaching of courses at the degree and diploma levels and to strengthen AREP's ability to build up the MOA communication units;
- Training in the use of computers (i.e., computer literacy, word processing, spreadsheet, and other potential applications such as the preparation of visuals)
- Training in the use of video equipment; such equipment was reported to be available now on several of the islands but extension and communication staff need training in how to use the equipment; and
- Training in project management and staff supervision.

Training in these areas is needed for Department of Extension headquarters and field staff as well as MOA extension and communication staff. Short-term training of leaders of farmer organizations (e.g., how to run an organization) also was identified as an important training need.

With respect to long-term training, it was proposed that AREP also should provide opportunities for extension staff to get a first degree as well as some opportunities for earning an M.Sc. degree.

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[4]Based on an interview with Joseph Sepersad, Head, Department of Agricultural Extension, University of the West Indies, Trinidad.

### b. Continuing Education Programme in Agricultural Technology (CEPAT)[5]

UWI's Faculty of Agriculture has developed a Continuing Education Programme in Agricultural Technology (CEPAT) (Faculty of Agriculture, n.d., 1991). Annex C provides the 1991 Calendar of CEPAT Regional Courses, while Annex D provides the Draft 1992 Calendar of courses that CEPAT potentially could offer. To date, during 1991, CEPAT has conducted 15 courses, with an objective of offering about 20 courses per year. Some of the courses offered are:

- Tropical Fruit Crop Production for Export
- Export Market Requirements for Fruits and Vegetable, and Floriculture
- Improved Postharvest Techniques for Tropical Fruits and Vegetables
- The Handling and Marketing of Agricultural Chemicals
- Responsibilities and Functions of Board Members of Commodity/Organizations

Asked what the priority training needs are, CEPAT's Programme Coordinator replied that there is "no easy answer" to this question. He indicated that CEPAT has identified more courses that are needed than there are resources to run. To determine which courses to conduct, CEPAT looks at each course's marketability in terms of fully covering the course's costs from participant fees and donor funding support, with the emphasis being on getting 100% of the direct costs covered through participant fees. Also, CEPAT must be able to pull together the requisite expertise from inside and/or outside the university.

It was learned that the Standing Committee of Ministers Responsible for Agriculture (SCMA) of the OECS countries has given approval for the UWI to work toward developing CEPAT into an Institute of Continuing Education in Agriculture (Caribbean Community Secretariat, 1991). This appears to be one of the initiatives under a development plan for UWI's St. Augustine Campus (University of the West Indies, 1991). This plan calls for the upgrading of the technical faculties, improving teaching methods, and developing a school of continuing studies.

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[5]Based on an interview with Theodore U. Ferguson, Programme Coordinator, CEPAT; Marlon C. Imamshah, Programme Assistant, CEPAT; and L. B. Rankine, Economist, Faculty of Agriculture, University of the West Indies, Trinidad.

4. Economic Commission for Latin America & the Caribbean[6]

The following were identified as priority training needs:

- Providing greater opportunities for practical training, i.e., combining training with practical work experience;
- Development of training in: biotechnology; environmental impact assessment; land use and watershed management; food, nutrition, and health; food processing technology (value-added processing); and agricultural policy;
- Specialized training in agricultural communications, with an emphasis on public education to bridge the communication gap between the MOAs and the public at large (i.e., consumers, tax payers, voters); and
- Upgrading of the Regional Extension Communications Unit (RECU) as a technical resource and data bank, to better be able to back up the MOA extension and communication units.

[6]Based on an interview with Patrick I. Gomes, Project Coordinator, ECLAC.

## B. West Indies Tropical Produce Support Project (TROPRO)

### 1. Agricultural Diversification Co-ordinating Unit, OECS[7]

The major perceived weakness is the lack of a sufficient public sector extension personnel trained in transferring the technology for the new diversification crops. TROPRO does not have the resources to conduct professional training on a mass scale in the OECS region. While TROPRO can buy expertise from the "outside," there is a need to develop a professional cadre of persons in CARDI and the MOAs who can train the front-line extension staff. However, the MOAs currently do not have sufficient front-line personnel with basic degree or post-graduate training. As a result, the OECS/ADCU is very much dependent on sending off people for short-term training at a cost of about US$1,000 per student per week, based on the course fee (US$ 600 per person for one week of CEPAT training) plus travel and per diem. However, the available pool of extension personnel having adequate training to be able to receive the required training is small, while few, if any, of the large number of small farmers can afford to be away from their farms for more than a few days.

These constraints have led the OECS/ADCU and TROPRO to ask several questions:

- Are we training the right people?
- Can we get to the numbers of people that need to be trained in order to achieve an impact?
- If we train exporters, will the exporter train others?
- Should TROPRO be considered the main vehicle for training?
- Will training even 100 people a year make a difference?
- Will there be a multiplier effect?

Consideration of these questions leads to the conclusion that it will only be possible to reach a larger number of growers by employing a "train the trainer" approach and working to identify persons who can continue to provide training through producer organizations. Yet when ADCU tries to recruit producers from countries participating in TROPRO, the MOAs prefer to send Ministry staff for training. Regional training such as provided through the UWI CEPAT courses need to be followed up by in-country training courses.

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[7]Based on an interview with Collin Bully, Program Co-ordinator, Agriculture Diversification Co-ordinating Unit, OECS; and Project Manager, TROPRO, Roseau, Dominica.

A key factor underlying the lack of supply of trained manpower to support diversification has been the failure of the agricultural education system in the Eastern Caribbean to produce graduates with a strong practical education in agriculture. The need for changing this system was identified in a report prepared for CARICOM's Council of Ministers by the Working Group on the Faculty of Agriculture, The University of the West Indies.[8] The need to address this problem is implicit in a proposal that the Inter-American Development Bank made to CARICOM for a study on "Policy Options for Improving Cost Effectiveness of Agricultural Research, Extension, and Training in CARCICOM Countries."

2. Ministry of Agriculture, Dominica[9]

This interview was useful in bringing to light that the MOA has never had a program that addressed long-term training needs. The Ministry simply has taken advantage of such training opportunities as may arise. In other words, there has not been a training plan and people are set off for training as the opportunities arise. While the MOA has done a good job at taking advantage of opportunities to provide staff with technical training, people have been sent off for training without any training policy or strategy for ensuring that staff are able to put their training to use on returning to their jobs. Thus, MOA staff have been trained in a haphazard manner. Further, as extension personnel move up from agricultural instructor to agricultural assistant to agricultural officer to technical officer, there is an increasing need for management training. But management skills have been seriously overlooked; as a result, the Ministry's biggest training need is for management training. However, as extension staff acquire training, they are more likely to leave extension for higher paying private sector jobs.

There is a need for extension staff to obtain specialized short-term training (2-3 months) in the production and post-harvest handling of specific crops with export potential. The MOA would like to ensure that each of the new crops is covered by an extension specialist. This will require training current extension staff as well as hiring new staff. However, it is not clear how, with this additional specialized training, the extension service will be able to retrain a full complement of persons in the budgeted positions. Currently the actual number of agricultural instructors is down significantly from the approximate 30 positions budgeted for agricultural instructors.

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[8]The referenced report was submitted to Hayden Blades, Chief, Agricultural Section, CARICOM. A copy could be requested through the FAO Representative (Patrick Alleyne) in Barbados.

[9]Based on an interview with Don Robinson, Chief Technical Officer, Ministry of Agriculture, Roseau, Dominica.

### 3. Produce Chemistry Laboratory[10]

This agency is staffed by a Produce Chemist (first degree and one-year diploma in food technology, UWI) and two laboratory assistants (high school graduates). One assistant has received a six-week course at the University of Miami on pesticide residue, and a two-week course in St. Lucia on pesticide residue analysis. The lab provides on-the-job training in post-harvest handling and packing for new huckster members of the Dominican Hucksters Association; the hucksters handle the inter-island fresh produce trade. The lab is implementing a water and produce monitoring program. Despite probing, no perceived training needs surfaced.

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[10]Based on an interview with Claudia Bellot, Produce Chemist, Division of Agriculture, Botanic Gardens, Roseau, Dominica.

## C. Environmental and Coastal Resources Project (ENCORE)

### 1. St. Lucia National Trust[11]

This quasi-government agency has a relatively small staff (i.e., n = 34) but is faced by expanding responsibilities for implementing national resource management and environmental protection projects. The expanding workload is placing a strain on this agency's current staff, with management now looking at how certain key positions can be filled or backstopped with adequately trained staff. The following are the training needs:

- Long-term:
  - Training in environmental law, environmental planning (e.g., environmental impact assessment), and natural resource economics;
  - Training to resource management, wildlife management, and ornithology;
  - Park construction and maintenance, requiring 2-year diploma-level training; and
  - Training in taxonomy (to assist in collecting and classifying samples of flora), plant preservation, and management of herbariums and botanical gardens.
- Short-term (1-6 months) training in:
  - Marketing, promotion, and public relations (so-called "park interpretation" or "environmental interpretation" to sensitize and educate the public);
  - Environmental resource management;
  - Museum development and management, including skills in preservation and taxidermy.

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[11]Based on interview with Giles Romulus, Projects Coordinator/Planner, St. Lucia National Trust, Castries, St. Lucia.

D. Eastern Caribbean Agricultural Policy (ECAP)

RDO/C did not identify a set of persons or agencies (e.g., MOA planning units) that would be involved in implementing this project, nor were representatives of these agencies interviewed for this study. However, the potential importance of HRD training in this area was noted by several of the persons interviewed (e.g., MOA in St. Lucia). The Mission is currently developing a Scope of Work for the team that will design this project.

E. Caribbean Agricultural Training Needs Survey

A recently conducted survey of agricultural training needs in the Caribbean (Edwards and Wood, 1991) concluded the following as requirements for agricultural training:

- Development of greater capacity to increase production to seize market opportunities;
- Development of agriculture's technical and commercial capacity to fully exploit the substantial markets which exist in tourism and agro-industries;
- Acceleration of the use of new technologies through the strengthening of research and development capabilities so as to cope with the international competitive threat to the region with the adoption of the open market economy by most countries;
- Enhancement of the capacity of agricultural institutions to deliver graduates for operational works, and teaching and training needs.

Box 4.2 lists the agricultural service areas indicated by the survey as requiring trained manpower. As Edwards and Wood (1991:9) note, this is "a formidable array...[of] needs [that] embrace not only the natural sciences and technology, but also the applied social sciences and a range of managerial and commercial skills." Overall, the study concluded that the region is

> woefully short of support staff, as the estimated number of junior and senior technicians required is 6,643, which is twice the current workforce estimated to be in the system. The situation seems to be even worse with respect to the graduates of the vocational agricultural training schools. The estimates imply that a) the technician support aspect of the manpower requirement is extremely short therefore, b) the agricultural education sector needs to turn out considerably more diplomates and vocational graduates" (Edwards and Woods, 1991:30-31).

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Box 4.2. Areas of HRD Training Needs Identified in the Caribbean Agricultural Training Needs Survey (Edwards and Wood, 1991).

1. Rural/Agricultural Development
   - rural works program
   - rural industries
   - socio-economic surveys
   - planning and policy program formulation
   - regional development
   - manpower planning strategies and employment issues
   - farm/population issues

2. Institutional/Organizational
   - farmer organizations
   - cooperatives
   - agricultural research and experimental stations for crops, livestock, farm management, farming systems, economics, mechanization
   - agricultural education and training in general agriculture, animal husbandry, veterinary science, fisheries, and forestry
   - extension/technical services for small and large farmers

3. Farm Inputs
   - suppliers of chemical fertilizers, pesticides
   - seed production and distribution
   - farm machinery services
   - water supply and irrigation schemes
   - farm labor
   - farm credit

4. Farm Outputs
   - produce quality control
   - marketing
   - processing, storage, and infestation control
   - product development
   - export

5. Regulatory
   - land reform
   - land settlement
   - soil conservation
   - water/flood control
   - drainage and irrigation
   - crop pest and disease control
   - food quality control
   - agricultural statistics

Further, the study concludes that, in the face of the globalization of trade and the adoption of an open market type economy in CARICOM countries,

> the respective agricultural sectors will be required to greatly increase their efforts in the application of science and technology to achieve the viability of their enterprises. Within the next ten years, the agricultural sector must grow; any further decline would prove disastrous for most CARICOM economies (Edwards and Woods, 1991:32).

The growth of the agricultural sector will depend on "a new level of skilled workforce for the sector in the 1990s" where the demand will be heavily weighted to service 1) productivity for viability, 2) quality production, and 3) the marketing systems. Within this context, the authors project that the near future demand for graduates is likely to be particularly strong in the areas of:

- Marketing;
- Intensive horticulture;
- Post-harvest technology;
- Crop protection;
- Forestry;
- Non-traditional crops;
- Intensive animal production; and
- Aquaculture.

In order to be able to respond to agriculture's emerging manpower needs, the authors call for a "reshaping" of the agricultural education system in the direction of being able to support a regional economic growth model for the agricultural sector that is science-based, wherein productivity is the basic engine of growth, induced by applying science and technology to agriculture, through borrowed or indigenous technology, whether generated, transferred, or adapted within the region. As the study notes:

> The science-based model would require a growing stream of local personnel trained for adaptation of science to agriculture to improve yields, productivity, and product development at reduced cost so as to ensure a sustainable and competitive agriculture. However, to support such an approach would require a general overhaul of the current system of agricultural education delivery (Edwards and Wood, 1991:34).

In the process of reshaping the agricultural education system at all levels to meet the challenges of the future, several key functions need to be met:

- A strong public awareness program on the enhancement of production, productivity, and viability of enterprises through a high calibre work force;
- Strengtheing of the respective institutional levels of the delivery system for in-service training to produce trainers, teachers, and frontline workers at the technician, craftsman, and middle manager levels;
- The generation of training materials on the use of new production methodologies, materials, and equipment for productivity and viability of operation.

For the short term, the study calls for:

- An increase in certificate and diploma graduates since the most critically required manpower is at the vocational level;
- An increase in diploma level graduates;
- An increase in intensive in-service training programs, targeting teachers and trainers as the first group; and
- Work experience/farm attachment requirement for the award of an undergraduate degree.

For the longer term, the study calls for:

- A Regional Occupation and Training Standards Unit;
- A competency-based instructional material development program; and
- Faculties of Agriculture to place themselves at the vanguard of the development of agricultural training in the region.

Regarding this latter recommendation, the study calls for the development of an agricultural education and training delivery system that provides for the progression of students from the primary schools to the other levels of the system, with the Faculty of Agriculture playing the lead role in rationalizing accreditation within the system.

With respect HRD training needs, the study proposes the following priorities:

- Personal development and team building for a more responsible and responsive work force;
- Middle management training;
- Skill development;
- Training material development;
- Sensitization of staff and students to the world of work; and
- Research programs at farm or operational levels for productivity, quality enhancement, and economic viability.

The required training content (curriculum) needs to be provided through:

- In-service training courses;
- Integration of HRD training subject matter within academic curricula;
- Regional projects for competency and skill enhancement; and
- Graduate studies in applied technology.

Overall, the reshaping of the system would lead to the following outputs:

- Trainable individuals beginning at the primary level;
- Adequate numbers of qualified students for the feeder system into agricultural institutions;
- Skilled agricultural teachers;
- Skilled technicians; and
- Enhanced capability of the technicians and farmers in agribusiness and production operations.

Potential administrative options for implementing a HRD plan as well as possible projects to facilitate this process are proposed by Edwards and Wood (e.g., a regional HRD agricultural unit within the UWI Faculty of Agriculture).

## F. Assessment of Perceived HRD Training Needs

While many specific training needs were identified by the different persons interviewed (see Section III for the specific identified needs), several common themes began to emerge across the interviews with respect to HRD training needs in the Eastern Caribbean agricultural sector. First, many of those interviewed noted the need for additional training in the management of projects and/or institutions responsible for managing project implementation.

Second, while some projects (e.g., ENCORE) provide support for advanced degree training to develop specialists in certain areas, the interviewees generally did not perceive a need for large numbers of persons to be trained to advanced (M.Sc. or Ph.D.) degree levels. But many see an urgent need for upgrading the education and training of staff at lower- to middle-level field-level positions (e.g., field extension workers and their supervisors). In some cases, this may require additional coursework to a B.Sc. level or earning a one-year specialized diploma. Alternatively, specialized training needs can be met through a series of short-term training events (i.e., short courses, workshops, and in-service training) that are coordinated so as to build cumulative knowledge and practical experience.

Third, the broad range of training needs, in terms of the more specialized technical areas referred to by those interviewed as well as by the recent Caribbean Agricultural Training Needs Survey (see Section III.E), is indicative of a basic problem in trying to define HRD training need priorities for the Eastern Caribbean. This problem is that one cannot easily compare apples and oranges, that is, to say that a short course on environmental impact assessment techniques is any more or less important than a short course on post-harvest mango handling techniques. In the same vein, is training farmer organization leaders any more or less urgent than training agricultural policy analysts?

Perhaps more importantly, if RDO/C finds that a training component needs to be included in each agricultural project, is this possibly an indicator that the existing agricultural education system, particularly at the univeristy-level (i.e., the University of the West Indies) is falling short of producing the manpower required to increase agricultural sector productivity? Indeed, in light of the findings and conclusions of the Caribbean Agricultural Training Needs Survey, should RDO/C support for meeting HRD training needs in the Eastern Caribbean be limited to ensuring that individual projects provide the needed long- and/or short-term training opportunities in specialized technical areas, or should the Mission play a more proactive role with respect to providing leadership to mobilize the donors and the public and private sectors to focus on the more basic problem of upgrading the region's HRD education and training capability?

The difficulty in answering such questions stems not only from the lack of an overall Mission strategy for agricultural education and training in the Eastern Caribbean but also from the lack of a conceptual framework to assess the urgency of training in one area as compared with another. Accordingly, section IV attempts to develop such a conceptual framework and to apply it to the problem of identifying the most critical HRD training needs.

## IV. Eastern Caribbean Agricultural Sector HRD Training Needs

The present section classifies the perceived training needs identified in Section III in terms of critical HRD training areas and suggests possible training programs and courses to meet these needs. The discussion in this section can be supplemented by a more detailed listing of educational and training opportunities that, if requested by RDO/C, could be provided by USDA's Technical Inquiry Service, per the draft request provided in Annex B.

### A. Critical Areas for HRD Training

This study's SOW stipulated that principal counterparts be interviewed "to identify areas of human resource development... not covered by RDO/C projects or other donors." The author sought to identify such HRD areas but always in the context of trying to capture HRD needs relevant to agricultural development but which may have been overlooked or underemphasized by donors in specific projects (e.g., RDO/C projects). At the same time, there may be, depending on the breadth of donor-sponsored development initiatives, a wide range of potentially relevant HRD training needs that RDO/C or other donors could assist in meeting; indeed, the broad range of problem areas covered by existing and planned RDO/C projects reduces the likelihood that one could identify new HRD training areas not covered or anticipated as being covered by the training components of existing or planned projects.

Specifically, past, ongoing, planned, and potential projects range from a focus on improving technology generation and transfer for import substitution and food security (traditional subsistence) crops (i.e. Small Farmer Cropping Systems, Farming Systems Research and Development, and Caribbean Agricultural Extension), to stimulating production and marketing of non-traditional agricultural export (NTAE) crops (i.e. AREP, TROPRO), to protecting the environment and natural resource base (i.e., ENCORE), to establishing a market-oriented macroeconomic policy environment (i.e. ECAP). As a result, RDO/C finds itself in a position where the set of development objectives to be addressed is expanding, while the resources available for achieving the objectives are dwindling. Thus, the task at hand should not be attempting to identify other potentially important "areas of human resource development...not covered by RDO/C projects or other donors" but rather establishing priorities among diverse Mission objectives and how scarce resources for HRD training can be best allocated among these objectives to achieve the greatest developmental impact.

One strategic notion that can be utilized as a basis for making decisions about allocating scarce resources for HRD training is to prioritize the training in term of four potential areas of impact on development, taking into account that achievement of some degree of impact in certain areas is essential for creating a more favorable environment for achieving impact in other areas. For example, one priority ranking of HRD training areas would be based on the premise that the existing macroeconomic environment, itself influenced by a government's macroeconomic and sectoral policies, creates a structure of incentives (or disincentives) for private sector investment in agriculture. According to this premise, the macroeconomic and sectoral policies established by a country's government are an essential pre-condition for increased investment in agricultural, one indicator of a vigorous private sector response to the prevailing policy environment.

However, the creation of a set of market-oriented policies is an essential, not necessarily a sufficient, condition for stimulating a vigorous private sector response. Other conditions also may be required for stimulating the private sector to invest vigorously in agriculture. Such conditions likely would include entrepreneurship and the availability of investment funds. But a key condition likely will be existence of trained manpower having the knowledge and skills to make sound technical and economic investment decisions. If there is a limited supply of trained manpower, the supply can be increased through training to increase the number of public/private sector persons who have management ability. Here "management" is essential for private sector (for profit) initiatives as well as for provision of public goods essential for a vigorous and sustainable private sector response.

This management variable applies to both shorter-term "project management" and to longer-term "institution management." As the mix of skills required for "project management" vs. "institution management" can vary significantly, a donor such as A.I.D. potentially is faced with having to make a choice between using scarce HRD training resources for strengthening short-term "project management" (at the risk of neglecting longer-term institutional sustainability) vs. using the same resources for longer-term "institutional strengthening" (i.e., strengthening "institution management" (risking that human resources available in the short run for project implementation will not be adequate).

A third priority area for HRD training is technology, that is, the knowledge and skills required to convert inputs into marketable outputs (i.e., goods and services). While this area is heavily emphasized in AREP and TROPRO, a case can be made that "technology" is the least urgent area for development assistance, as long as a country's macroeconomic policy environment places agriculture at a disadvantage. If there are no incentives for investment in agriculture, then the lack of a "vigorous private sector response" will be a function of a lack of demand for productivity-increasing technology, not any lack of supply thereof.

Finally, a fourth essential priority area for a "vigorous private sector response" in the agricultural sector is for the ultimate beneficiary groups (e.g., small farmers vis-a-vis agriculture and natural resources) to achieve an acceptable degree of enlightenment and empowerment. This can be achieved through the development and strengthening of farmer organizations (e.g., producer associations, farmer cooperatives) that assist farmers in overcoming production and marketing constraints that impede affordable access to agri-support factors (i.e., credit, production inputs, and marketing information) that are essential for making sound investments in agricultural production and marketing.

The identified priority areas for HRD training are presented in summary in Table 4.1, along with an assessment of the degree to which these areas are not covered by those RDO/C projects reviewed herein. The table also includes reference to the need, identified by the Caribbean Agricultural Training Needs Survey, to reshape the agricultural education delivery system.

## B. Training Programs to Meet the Identified HRD Training Needs

Table 4.2 provides a summary of the kinds of training programs that would address the identified HRD training needs. The proposed training is indicated only in generic, specific, and illustrative terms in order to assist in identifying potential providers who may offer the required training. More advanced or specialized training in priority areas such as agricultural policy analysis, management (e.g., agricultural research resource allocation), and technology (e.g., post-harvest handling and processing) likely will require training outside the region (e.g., in the U.S.) and would provide the additional benefit of exposing training participants to new ways of problem solving (i.e., a sense of the U.S. experience).

Table 4.2 does not address the issue of the need to reshape the Eastern Caribbean agricultural education delivery system. Of course, this is not an issue that can be addressed piecemeal; as an RDO/C initiative, singularly or preferably in collaboration with other donors, the MOAs, and the private sector, it would require its own project or at least being made a major component of a future Mission project (e.g., ECAP). Such an initiative would require a major long-term commitment (at least 10 years) by all concerned to reshape the system according to a defined set of educational performance standards. In this regard, RDO/C may wish to consider the possibility of making reshaping of the agricultural education system a major topic for policy dialogue with the region's national-level governments.

Table 4.1. Priority HRD Training Areas in the Eastern Caribbean and Degree Identified Areas Are Emphasized in RDO/C Projects.

| Priority HRD Training Areas | Degree Emphasized in RDO/C Projects |
|---|---|
| 1. Policy | Weak to None in all but ECAP |
| a. Policy Making | None |
| b. Policy Analysis | Weak (or None) |
| 2. Management | Moderate to Weak |
| a. Project Management | Moderate |
| b. Institution Management | Weak |
| 3. Technology | Strong to Moderate |
| a. Technology Transfer | Moderate |
| b. Technology Generation | Strong |
| 4. Farmer Organization Strengthening | Moderate to Weak |
| a. Empowerment | Weak |
| b. Enlightenment | Moderate |
| 5. Reshaping EC's Agricultural Education System | Weak for education but strong for research(CARDI) and extension (MOAs & UWI) |

Table 4.2. Training Programs and Courses to Meet Eastern Caribbean HRD Training Needs.

| Generic HRD Training Needs | Specific HRD Training Needs | Illustrative HRD Training Needs by Technical Areas (to emphasize linking training to internships) |
|---|---|---|
| Policy | Policy Decisionmaking<br>Policy Analysis | Agricultural Policy Analysis<br>Environmental Law, Planning, & Impact Assessment<br>Data Bank Development and Utilization<br>"Agriculture and Exporting in Action" Study Tours<br>Policy Analysis and Planning Workshops<br>Computer Literacy |
| Management | Institution Management<br>Project Management | Human Resource Leadership/Management/Administration<br>Program Planning and Evaluation<br>Project Preparation Appraisal<br>Computer Literacy & Proposal Writing<br>Design & Use of Management Information Systems (MIS)<br>Project Evaluation<br>Research Resource Allocation<br>Environmental Resource Management |
| Technology | Technology Generation<br>Technology Transfer | Biotechnology Development Utilization<br>Increasing Productivity/Improving Quality Control<br>Crop Protection and Pesticide Use Management<br>Post-Harvest Handling and Marketing<br>Value-Added Processing / Food Processing Technology<br>Land/Park/Forest/Watershed/Wildlife Management<br>Economics of Agricultural Production, Marketing, and Natural Resources Management<br>Management of Applied/Adaptive Agricultural Research<br>Integrated Communication Methodologies for Technology Transfer & Environmental Protection |
| Farmer Organization Strengthening | Enlightenment<br>Empowerment | Leadership Training for Board Members<br>Organizational Development and Staff Management<br>Cost Effective Servicing & Revenue Generation<br>Deal Making for Export Marketing<br>Managing Small Businesses for Profit<br>Accessing Land Titles, Market Information, Credit, Inputs, and Markets<br>Farm and Home Management Economics (Decisionmaking) |

## V. Criteria for HRD Training Participant Selection

This section develops criteria for selecting participants to be financed by ARDN contributions to the training components of RDO/C projects. In the following, it is assumed that the subject HRD training could be for long-term academic degree training (e.g., M.Sc.) or short-term training (e.g., a workshop or short course). The discussion considers (A) essential external conditions for training effectiveness, and (B) criteria for selecting candidates for participant training.

### A. Essential External Conditions for Training Effectiveness

First, it is assumed that a decision to select a participant for HRD training presupposes that the proposed training is part of a proactive, not a reactive, training plan. In other words, the acquisition of the subject training by the participant should provide him (her) with the knowledge and skills essential for the performance of a key role and/or task essential for achieving a development objective that is being pursued by the project that is funding the training. Persons should be sent for training not because training opportunities are available but rather because acquisition of the subject training is essential for achieving a priority development objective.

Generally, the Mission's modus operandi with respect to the support of training is more reactive than proactive. If establishing a favorable economic and sectoral policy environment is a sine qua non for making significant progress with respect to stimulating a vigorous private sector response, then it follows that a policy-related project initiative such as Eastern Caribbean Agricultural Policy (ECAP) should be the foundation on which the Mission would build its other project initiatives. Yet ECAP is only at the Concept Paper stage, while the Mission is attempting to move ahead on AREP, TROPRO, and ENCORE, the long-term success of which will ultimately depend on whether or not the region has an adequate macroeconomic and sectoral policy environment which, in turn, will depend on having an adequate policy analysis and policy making capability. While training under AREP, TROPRO, and ENCORE has the potential to make significant contributions in the short run, the progress made may not be sustainable in the longer term, given a continuing weakness with respect to the region's policy analysis and policy making capability and the resulting less than favorable environment for investment in agriculture.

In short, these considerations must be taken into account in deciding to what extent and how quickly scarce resources should be invested in training at lower priority HRD training areas such as management, technology, and farmer organization strengthening. Yet the problem is complicated to a certain extent by the fact that, while there is a great deal of interrelationship among the four priority HRD training areas, each of the Mission's projects (AREP, TROPRO, and ENCORE) operates relatively independently, in effect, competing for scarce resources both in the Mission and in the region at large.

Second, it is assumed that, when the period of training has been completed and the individual is ready to apply the training in his (her) job, the following conditions will have been met:

- That the participant, once trained, will return to and, for a reasonable length of time, stay in the job for which he (she) received the training;
- That the participant, on returning to his (her) job, will have the resources needed to apply the acquired training; and
- That the system (e.g., organization) to which the training participant returns will provide a conducive environment for applying the acquired training.

If these conditions are not in place within the organization to which the participant is returning, the participant likely will not be able to apply the acquired training on returning to his or her job and RDO/C's training investment will be lost.

Third, it is assumed that, where additional persons need to be trained beyond those specifically funded for training under an RDO/C project, a system will have been established whereby those persons trained under RDO/C projects themselves become trainers of the additional persons who require training. In other words, to a certain extent, to achieve a multiplier effect and increase the cost effectiveness of training a few under RDO/C-funded projects, the few must be called on to assist in taking on the task of training the many. This will require establishing a strategy for training "training participants" to become "trainers" as well as establishing a system where by such "trainers" can participate in training the larger numbers who require training.

Fourth, and finally, it is assumed that the full training job cannot be done by any one or more donor projects and that the Eastern Caribbean public and private sectors ultimately must take responsibility, preferably sooner than later, for ensuring the development of an agricultural education system responsive to the region's long-term HRD training needs in the agricultural sector.

## B. Criteria for Selecting Candidates for HRD Training

Whether the required HRD training is long-term or short-term, there are key external conditions essential for training effectiveness, while certain key criteria should be followed in selecting candidates for training. Consideration should be given to appropriate weighting of these criteria, recognizing that appropriate weightings could vary depending on the nature of the subject training.

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Table 5.1. Criteria for Selecting Candidates for HRD Training.

- Prior Education and Training--That the candidate have sufficient prior knowledge, understanding, and/or skills to be able to receive the subject training.
- Prior Work Experience--That the candidate have relevant prior work experience.
- Desire to Apply Training--That the candidate manifest a strong desire to receive the subject training and to apply this training once back on the job.
- Attitude toward Work--That the candidate have a demonstrated record of being a hard worker.
- Interpersonal Relationships--That the candidate have a demonstrated record of being able to work with other people.
- Willingness to Share Learning--That the candidate have a demonstrated willingness to share acquired knowledge and skills with colleagues.
- Leadership Potential--That the candidate have a demonstrated potential for leadership.
- Letters of Reference--That the candidate provide letters of reference from three appropriate sources

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The USDA Technical Inquiry Service or private training firms such as the Management Training and Development Institute (MTDI) could refer the Mission to studies providing detailed assessments of the relative validity of one criterion vs. another as a basis for selecting candidates who will be most effective in terms of translating their training into improved on-the-job performance.

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# ANNEXES

Annex A. List of Projects/Organizations/Persons Contacted.

RDO/C, Bridgetown, Barbados

- Ron Stryker, Agricultural Development Officer
- Tim Miller, AREP Project Officer
- Albert Merkel, TROPRO Project Office
- Howard Batson, Agriculture and Natural Resources Officer
- Fred Mann, Consultant to RDO/C

Counterpart Organizations

- David J. Demacque, Director of Agricultural Services, Ministry of Agriculture, Lands, Fisheries, Forestry, and Cooperatives, Castries, St. Lucia, West Indies

- Giles Romulus, Projects Coordinator/Planner, St. Lucia National Trust, Castries, St. Lucia

- Barton Clarke, Leader, Technology Adaptation and Transfer Program, CARDI, Castries, St. Lucia

- Calvin A. Howell, Executive Director, Caribbean Conservation Association, Bridgetown, Barbados

- Rosina Wiltshire, Membership and Development Affairs, Caribbean Conservation Association, Bridgetown, Barbados

- Joseph Seepersad, Head, Department of Agricultural Extension, University of the West Indies, Trinidad

- Samsundar Parasram, Director, Special Services, Caribbean Agricultural Research and Development Institute, UWI Campus, Trinidad

- Richard A. Brittaine (on detail from GITEC), Technology Transfer Coordinator, CARDI, UWI Campus, Trinidad

- Theodore U. Ferguson, Coordinator, Continuing Education Programme in Agricultural Technology (CEPAT), Faculty of Agriculture, University of the West Indies, Trinidad

- Marlon C. Imamshah, Programme Assistant, Continuing Education Programme in Agricultural Technology (CEPAT), Faculty of Agriculture, University of the West Indies, Trinidad

- L. B. Rankine, Economist, Faculty of Agriculture, University of the West Indies, Trinidad

- Patrick I. Gomes, Project Coordinator, Promotion of Training Policies in the Caribbean, United Nations Economic Commission for Latin American and the Caribbean (ECLAC), Trinidad

- Collin Bully, Head, Agricultural Diversification Unit, OECS, and Project Manager, TROPRO, Dominica

- Don Robinson, Chief Technical Officer, Ministry of Agriculture, Dominica

- Felix Gregoire, Head, Forestry Department, Ministry of Agriculture, Dominica

- Antonio M. Pinchinat, Regional Specialist in Technology Generation and Transfer, IICA, Castries, St. Lucia

Annex B. Draft RDO/C Request for Training Programs and Courses to Meet Eastern Caribbean HRD Training Needs.

DT:
TO: Pat Wetmore, USDA Technical Inquiry Service
FR: Tim Miller, RDO/C
RE: Sources of Long- and Short-Term Training to Meet Eastern Caribbean HRD Training Needs.

LAC TECH's Kerry Byrnes recently prepared, at RDO/C's request, a report assessing agricultural sector HRD training needs in the Eastern Caribbean. A copy of Byrnes' report is available from the LAC TECH project through LAC/DR/RD (contact Tim O'Hare).

Based on the report's analysis, the Mission would like to identify potential sources of long- and short-term training for the priority areas of HRD training identifed in the subject report. The attached table (Table 4.2) provides a listing of key or illustrative HRD training needs.

Generally, we are looking for sources of short-term training (1-3 months) for most areas, although long-term training (e.g., B.Sc. or M.Sc.) would be appropriate for the topics identified by an asterisk.

For the Illustrative HRD Training Needs by Technical Areas, please identify English-speaking sources of specialized short course and degree-level training (i.e., country, institution, address, contact person, curriculum, costs, schedules, etc.).

Also, we would greatly appreciate it if you could compile informational brochures and catalogues for these institutions and forward these to our office in Bridgetown.

Your assistance is greatly appreciated.

Table 4.2. Training Programs and Courses to Meet Eastern Caribbean HRD Training Needs.

| Generic HRD Training Needs | Specific HRD Training Needs | Illustrative HRD Training Needs by Technical Areas (to emphasize linking training to internships) |
|---|---|---|
| Policy | Policy Decisionmaking<br>Policy Analysis | Agricultural Policy Analysis<br>Environmental Law, Planning, & Impact Assessment<br>Data Bank Development and Utilization<br>"Agriculture and Exporting in Action" Study Tours<br>Policy Analysis and Planning Workshops<br>Computer Literacy |
| Management | Institution Management<br>Project Management | Human Resource Leadership/Management/Administration<br>Program Planning and Evaluation<br>Project Preparation Appraisal<br>Computer Literacy & Proposal Writing<br>Design & Use of Management Information Systems (MIS)<br>Project Evaluation<br>Research Resource Allocation<br>Environmental Resource Management |
| Technology | Technology Generation<br>Technology Transfer | Biotechnology Development Utilization<br>Increasing Productivity/Improving Quality Control<br>Crop Protection and Pesticide Use Management<br>Post-Harvest Handling and Marketing<br>Value-Added Processing / Food Processing Technology<br>Land/Park/Forest/Watershed/Wildlife Management<br>Economics of Agricultural Production, Marketing, and Natural Resources Management<br>Management of Applied/Adaptive Agricultural Research<br>Integrated Communication Methodologies for Technology Transfer & Environmental Protection |
| Farmer Organization Strengthening | Enlightenment<br>Empowerment | Leadership Training for Board Members<br>Organizational Development and Staff Management<br>Cost Effective Servicing & Revenue Generation<br>Deal Making for Export Marketing<br>Managing Small Businesses for Profit<br>Accessing Land Titles, Market Information, Credit, Inputs, and Markets<br>Farm and Home Management Economics (Decisionmaking) |

Annex C. 1991 Calendar of CEPAT Regional Courses.

The University of the West Indies
TROPICAL AGRICULTURAL TECHNOLOGY TRAINING UNIT
Faculty of Agriculture
CONTINUING EDUCATION PROGRAMME
IN AGRICULTURAL TECHNOLOGY
CEPAT
St. Augustine, Republic of Trinidad and Tobago, W.I.
Telephones: 1-809-663-1364 Ext. 2518, 3322 or 662-1182 Fax: 1-809-662-1182 Telex: 24520 UWI WG
Cable: 'SHOMAIA' Port of Spain

* = was conducted or confirmed that will be held

# *Calendar of CEPAT REGIONAL COURSES (REVISED)*

# *1991*

The UWI Faculty of Agriculture is pleased to announce that CEPAT will be offering the following Regional Courses in 1991

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* ***Jan. 21-25*** ***IMPROVED TECHNOLOGIES FOR WHITE POTATO PRODUCTION IN THE EASTERN CARIBBEAN***
Collaborators: CARDI and Ministry of Agriculture, St. Kitts
Location: St. Kitts
Course Coordinators: Mr. J. Thomas (Min. of Agriculture) and Dr. F. Elango (UWI)

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***Jan. 28 - Feb. 15*** ***AGRICULTURAL PROJECT APPRAISAL: ANALYSIS, IMPLEMENTATION, EVALUATION AND MANAGEMENT - COMPUTER APPLICATION***
Collaborators: FAO/ITALY/PROCAPLAN
Location: Jamaica
Course Coordinators: Dr. R. H. Singh and Dr. L. B. Rankine (UWI)

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* ***Feb. 17-23*** ***IMPROVED TECHNOLOGIES FOR THE PRODUCTION OF SWEET POTATO IN THE CARIBBEAN***
Collaborators: CARDI
Location: St. Vincent
Course Coordinators: Dr. L. Wickham (UWI) and Dr. M. Rao (CARDI)

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* ***Mar. 18-28*** ***TROPICAL FLORICULTURE PRODUCTION FOR EXPORT***
Location: Trinidad
Course Coordinator: Dr. D. Rajkumar (UWI)

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* ***Mar. 25-28*** ***NEW APPROACHES FOR THE PRODUCTION OF ONIONS FOR THE CARIBBEAN***
Collaborators: CARDI
Location: Barbados
Course Coordinator: Mrs. F. Chandler (CARDI) and Prof. L. A. Wilson (UWI)

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***Mar. 25-30*** ***SOLAR DRYING IN AGRICULTURE***
Collaborating Institution: CARIRI
Location: Trinidad
Course Coordinator: Dr. O. Headley (UWI)

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## CEPAT 1991 CALENDAR continued

* Apr. 15-27 — AGRIBUSINESS: DEVELOPMENT OF SMALL AND MEDIUM-SIZED ENTERPRISES IN THE CARIBBEAN
Collaborators: FAO/ITALY/PROCAPLAN
Location: Barbados
Course Coodinators: Dr. R. H. Singh and Dr. L. B. Rankine (UWI)

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* May 6-17 — TROPICAL FRUIT CROP PRODUCTION FOR EXPORT
Collaborators: Export Development Corporation and CARDI
Location: Trinidad
Course Coordinators: Dr. L. Roberts-Nkrumah (UWI)

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* May 6-11 — PESTICIDE SAFETY (INCLUDING APPLICATION TECHNOLOGY)
Location: Trinidad
Course Coordinator: Dr. R. A. Braithwaite (UWI)

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May 27-June 7 — COMMUNICATION SKILLS FOR COMMODITY EXTENSION WORKERS
Location: Grenada
Course Coordinator: Dr. D Campbell (UWI)

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* July 1-12 — MONITORING PESTS AND DISEASES OF CROPS AND LIVESTOCK IN THE CARIBBEAN (THIRD REGIONAL COURSE)
Collaborating Institute: IICA
Location: Trinidad
Course Coordinator: IICA

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June 3-14 — VEGETATIVE PROPAGATION TECHNOLOGIES (INCLUDING TISSUE CULTURE) ( FOR FRUIT CROPS AND ORNAMENTALS
Location: Trinidad
Course Coordinator: Dr. L. Roberts-Nkrumah (UWI)

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June 24 - July 18 — FOOD AND NUTRITION PLANNING
Collaborating Institution: Caribbean Food and Nutrition Institute
Location: Trinidad
Course Coordinator: Dr. C. Mc Intosh (CFNI) and Dr. C. Pemberton (UWI)

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* July 1-9 — IMPROVED POST HARVEST TECHNOLOGIES FOR TROPICAL FRUITS AND VEGETABLES
Location: Dominica
Course Coordinator: Dr. L. Wickham (UWI)

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|---|---|
| *July 1-27* | ***AGRICULTURAL AND RURAL DEVELOPMENT PLANNING AND POLICIES USING THE CAPPA COMPUTERISED SYSTEM***<br>**Collaborators:** FAO/ITALY/PROCAPLAN<br>**Location:** Jamaica<br>**Course Coordinators:** Dr. R. H. Singh and Dr. L. B. Rankine (UWI) |
| * *July 7-27* | ***SMALL RUMINANT MANAGEMENT FOR PROFIT***<br>**Collaborators:** Sugarcane Feeds Centre<br>**Location:** Trinidad<br>**Course Coordinators:** Mr. F. Neckles (SFC) and Dr. G. Garcia (UWI) |
| *Aug. 5-10* | ***WEED MANAGEMENT***<br>**Collaborating Institution:** CARDI<br>**Location:** Trinidad<br>**Course Coordinator:** Dr. R. A. I. Braithwaite (UWI) |
| *Aug. 19-29* | ***PERSPECTIVES ON TEACHING AGRICULTURAL SCIENCE AT CXC LEVEL***<br>**Location:** Trinidad<br>**Course Coordinator:** Dr. S. M. Griffith (UWI) |
| * *Aug. 26-Sep. 13* | ***EXPORT MARKET REQUIREMENTS FOR FRUITS, VEGETABLES AND FLORICULTURE***<br>**Collaborating Institution:** Export Development Corporation, Trinidad & Tobago<br>**Location:** Trinidad<br>**Course Coordinator:** Mr. M. Mohammed (UWI) |
| *September*<br>*(dates to be finalised)* | ***MICROCOMPUTERS IN AGRICULTURAL RESEARCH***<br>**Location:** Trinidad<br>**Course Coordinator:** Mr. I. Bekele (UWI) |
| * *Sep. 2-20* | ***ABATTOIR FACILITIES, MEAT HANDLING AND BY-PRODUCT UTILIZATION (SECOND REGIONAL COURSE)***<br>**Collaborators:** Sugarcane Feeds Centre<br>**Location:** Trinidad<br>**Course Coordinator:** Mr. F. Neckles (SFC) and Dr. G. Garcia (UWI) |
| * *Sep. 2-21* | ***AGRICULTURAL PROJECT APPRAISAL: ANALYSIS, IMPLEMENTATION EVALUATION AND MANAGEMENT - COMPUTER APPLICATION***<br>**Collaborators:** FAO/ITALY/PROCAPLAN<br>**Location:** Trinidad<br>**Course Coordinators:** Dr. R. H. Singh and Dr. L. B. Rankine (UWI) |
| * *Sep. 9-21* | ***RESPONSIBILITIES AND FUNCTIONS OF BOARD MEMBERS OF COMMODITY/ ORGANISATIONS***<br>**Location:** Tobago<br>**Course Coordinator:** Prof. L. A. Wilson (UWI) |

*Sep. 9-21* — *INSPECTIONS AND TREATMENTS IN PLANT QUARANTINE*
Location: St. Kitts
Course Coordinator: Dr. G. Pollard (UWI)

* *Sep. 23-28* — *AGRICULTURAL POLICY AND STRUCTURAL ADJUSTMENT*
Collaborators: ITALY/FAO/PROCAPLAN
Location: Jamaica
Course Coordinators: Dr. R. H. Singh and Dr. L. B. Rankine (UWI)

* *Oct. 21-Nov. 1* — *MACRO-ECONOMIC AND AGRICULTURAL SECTOR POLICIES - STRUCTURAL ADJUSTMENT*
Collaborators: ITALY/FAO/PROCAPLAN
Location: Trinidad
Course Coordinator: Dr R. H Singh and Dr. L. B. Rankine (UWI)

*Nov. 10-22* — *AGRIBUSINESS: DEVELOPMENT OF SMALL AND MEDIUM-SIZED ENTERPRISES IN THE CARIBBEAN*
Collaborators: ITALY/FAO/PROCAPLAN
Location: Dominica
Course Coordinator: Dr. R. H. Singh and Dr. L. B. Rankine (UWI)

**For further information, please contact:**

The Programme Coordinator
Continuing Education Programme in Agricultural Technology
Faculty of Agriculture
The University of the West Indies
St. Augustine
Republic of Trinidad & Tobago

Telephone: (809) 663-1364. Ext. 2318/3322 or 662-1182
FAX: (809) 662-1182
Telex: 24520 UWI WG. Cable: 'STOMATA' Port of Spain.

MPC Faculty of Education UWI

Annex D. Draft 1992 Calendar of CEPAT Courses.

DRAFT 1992 CALENDAR (most likely to be held)

IRRIGATION TECHNOLOGIES FOR CARIBBEAN AGRICULTURE

SOLAR DRYING IN AGRICULTURE

AGRIBUSINESS: DEVELOPMENT AND MANAGEMENT OF SMALL AND MEDIUM-SIZED ENTERPRISES IN THE CARIBBEAN

AGRICULTURAL PROJECT APPRAISAL: ANALYSIS, IMPLEMENTATION EVALUATION AND MANAGEMENT - COMPUTER APPLICATION

TROPICAL FLORICULTURE PRODUCTION (SECOND REGIONAL COURSE)

AQUACULTURE PRODUCTION TECHNOLOGIES

DIAGNOSIS AND CONTROL OF PESTS, DISEASES, WEED PROBLEMS AND NUTRIENT DISORDERS IN SELECTED CROPS (SECOND REGIONAL COURSE)

PIG PRODUCTION

POULTRY PRODUCTION

RESPONSIBILITIES AND FUNCTIONS OF BOARD MEMBERS OF COMMODITY/ORGANISATIONS

GINGER PRODUCTION

AGRICULTURAL AND RURAL DEVELOPMENT MANAGEMENT

FOOD AND NUTRITION PLANNING

TOMATO/SWEET PEPPER PRODUCTION

THE PRODUCTION, HANDLING AND MARKETING OF MANGO

THE PRODUCTION, HANDLING AND MARKETING OF PAPAYA

INSPECTIONS AND TREATMENTS IN PLANT QUARANTINE

VEGETATIVE PROPAGATION AND NURSERY MANAGEMENT

MONITORING PESTS AND DISEASES OF CROPS AND LIVESTOCK IN THE CARIBBEAN (FOURTH REGIONAL COURSE)

COCOA PEST AND DISEASE MANAGEMENT - DECISION TOOLS

FORAGE PRODUCTION AND UTILIZATION

SMALL MACHINERY FOR CARIBBEAN AGRICULTURE

(possibly will be held)

IMPROVED TECHNOLOGIES FOR WHITE POTATO PRODUCTION IN THE CARIBBEAN (SECOND REGIONAL COURSE)

PERSPECTIVES ON TEACHING AGRICULTURAL SCIENCE AT CXC LEVEL

DAIRY PRODUCTION

EXPORT MARKETING OF FRUITS AND VEGETABLES

YAM PRODUCTION

AGRICULTURAL POLICY AND STRUCTURAL ADJUSTMENT

WEED MANAGEMENT

PESTICIDE SAFETY (INC. APPLICATION TECHNOLOGY) (SECOND REGIONAL COURSE)

FOOD PROCESSING TECHNOLOGIES

SOIL AND LAND USE SURVEY

(being considered as possible courses)

ARTIFICIAL INSEMINATION TECHNOLOGIES

ENVIRONMENTAL ISSUES IN AGRICULTURE

PRODUCTION, HANDLING AND MARKETING OF BREADFRUIT

PRODUCTION, HANDLING AND MARKETING OF SOURSOP AND OTHER ANNOCEAE

PRODUCTION, HANDLING AND MARKETING OF PASSION FRUIT

MANAGEMENT OF YOUTH AGRICULTURAL PROJECTS

DAM CONSTRUCTION

SOIL AND WATER CONSERVATION TECHNIQUES

COMMUNICATION SKILLS FOR EXTENSION WORKERS