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ANNUAL REPORT (1991)
TO
THE GOVERNMENT OF GUYANA



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IICA OFFICE IN GUYANA

"WHAT IS IICA?"

The Inter-American Institute for Cooperation on Agriculture (IICA) is the specialized agency for agriculture of the Inter-American system. The Institute was founded on October 7, 1942 when the Council of Directors of the Pan-American Union approved the creation of the Inter-American Institute of Agricultural Sciences.

IICA was founded as an institution for agricultural research and graduate training in tropical agriculture. In response to changing needs in the hemisphere, the Institute gradually evolved into an agency for technical cooperation and institutional strengthening in the field of agriculture. These changes were officially recognized through the ratification of a new Convention on December 8, 1980. The Institute's purposes under the new Convention are to encourage, facilitate and support cooperation among its 32 Member States, so as to better promote agricultural development and rural well-being.

With its broader and more flexible mandate and new structure to facilitate direct participation by the Member States in the activities of the Inter-American Board of Agriculture (IABA) and the Executive Committee, the Institute now has a geographic reach that allows it to respond to needs for technical cooperation in all of its Member States.

The contributions provided by the Member States and the ties IICA maintains with its 13 Permanent Observer Countries and numerous international organizations provide the Institute with channels to direct its human and financial resources in support of agricultural development throughout the Americas.

The 1987-1993 Medium Term Plan, the policy document that sets IICA's priorities, stresses the reactivation of the agricultural sector as the key to economic growth. In support of this policy, the Institute is placing special emphasis on the support and promotion of actions to modernize agricultural technology and strengthen the processes of regional and subregional integration. In order to attain these goals, the Institute is concentrating its actions on the following five Programmes: Agricultural Policy Analysis and Planning; Technology Generation and Transfer; Organization and Management for Rural Development; Trade and Agroindustry; and Agricultural Health.

The Member States of IICA are: Antigua and Barbuda, Argentina, Barbados, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Dominica, the Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, Suriname, Trinidad and Tobago, the United States of America, Uruguay and Venezuela. The Permanent Observer Countries of IICA are: Arab Republic of Egypt, Austria, Belgium, Federal Republic of Germany, France, Israel, Italy, Japan, Netherlands, Portugal, Republic of Korea, Romania and Spain.

The dedicated support and cooperation of the professional and general services staff of the IICA Office in Guyana and the collaboration of the International and National Institutions, in particular the Ministry of Agriculture, in the execution of the 1991 Operations Plan and making this report possible, are acknowledged and greatly appreciated.

George Buckmire
IICA Representative in Guyana

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Background

Throughout the last decade Guyana continued to experience drastic social and economic decline with an average growth rate of 2.3%. Towards the end of the decade the Government initiated the IMF supported Economic Recovery Programme aimed, *inter alia*, at restoring fiscal balance, reducing imbalances in the external accounts, rehabilitating vital socio-economic infrastructure, increasing domestic production and exports, reducing the relative size of the public sector to encourage the private sector to increase its participation in the development of the economy. By the end of 1991 there was increasing evidence that the Economic Recovery Programme (ERP) had begun to achieve some positive results, although as yet, the immediate impact has been more evident in a few sectors of the economy, in particular the extractive industries (mining, forestry and fishery), manufacturing and agriculture. The financial situation of the country also showed some improvement as the Government was able under IMF arrangements to settle outstanding obligations to multi-lateral, financial institutions and to reschedule others. Thus, by the close of 1991, it was estimated that for the first time in more than a decade, the country would have a positive foreign exchange reserve of over US\$100 m. All of these changes were given impetus by the progress of democratization of the soci-

ety and the expectation of "free and fair" elections by mid-December, 1991.

Within the agricultural sector the employment of Booker-Tate; the international sugar conglomerate, to provide professional management services to the important State sugar corporation (GUYSUCO), contributed to a significant turn-around of the industry, which in years has been characterized by low productivity and declining output. Under the new management arrangements, sugar production in the second crop of 1991 increased to 105,000 tons as compared with 73,000 tons for the same crop of 1990. Similar developments occurred in the rice sub-sector, following divestment of a number of state rice mills and other operations. The non-traditional sub-sector was perhaps the only area within agriculture showing positive growth during the preceding years and this positive performance continued throughout 1991. Sugar and rice have been the most important crops within the sector contributing annually approximately 15-20% of the GDP and between 37-50% of total domestic exports, whereas the agricultural sector as a whole contributes between 25-30% to GDP. Considering the improvements taking place in these critical sub-sectors, it is expected that agriculture will play a major role in the country's economic recovery.

In 1991, IICA's Technical Cooperation Programme (TCP) in Guyana, continuing from previous years, focussed on the following three priority areas:

- (i) Livestock production including animal health
- (ii) Crop diversification, emphasis on fruit tree crop production
- (iii) Integrated rural development.

During 1991 there was a shift in emphasis in the Livestock Production Project, from small farmer dairy production systems to livestock production systems. While still supporting some dairy production actions in collaboration with the National Dairy Development Programme (NDDP) and the Caribbean Agricultural Research and Development Institute (CARDI), the new emphasis is on vice aimed at the development of an appropriate package of technology for integrated tree crop and livestock management; coconut interplanted with grass for grazing (or cutting) by sheep has been selected for the initial investigations by the project. The methodology follows that of the earlier small farm dairy project, in which field investigations and trials were conducted on selected private farms which were closely supervised and monitored.

As the international market for certain nontraditional crops expanded in 1991, there was increasing interest in Guyana in the production of exotic fruit crops including West Indian cherry, passion fruit and pineapple. The Tropical Fruits Project, initiated in 1987, was well established to provide leadership and guidance to the new interest groups and to support the Ministry of Agriculture in its efforts to develop the sub-sector. One of the more significant developments during the year was the establishment of private fruit tree nurseries by a few leading farmers to support the development of their commercial fruit orchards, including West

Indian cherry and passion fruit. These efforts were closely supported by the project and much useful field data was generated through this collaboration. Additionally, the project continued with its strong emphasis on training of farmers and technical counterparts, which served to strengthen the plant pest and disease surveillance system.

A problem of a high rate of mobility among the male members of the Community challenged the Moraikobai Integrated Rural Development Project in 1991. The increasing scarcity of males of working age affected training programmes and the execution of other project activities.

This is a problem faced by most small interior communities especially as the extractive industries are revitalized requiring a substantial labour force. Innovative solutions are required to deal with this problem. In spite of this, the IRD project made positive strides during the year with greater involvement of the female members of the community. As in previous years, there was a strong emphasis on training with twenty training actions being executed. These involved approximately two hundred adults and a larger number of school children. Trainees were exposed to activities covering such topics as agriculture, agro-forestry, pest management, processing and preservation, home economics, handicraft, drama, public health and forest inventory procedures. The training actions were reinforced by establishment of on-farm demonstration plots and field trials designed to select suitable crop combinations, e.g. grass under coconuts, agro-forestry gardens and orchards. The programme also involved replanting of certain local forest species such as *Ite palm* used for handicraft and introduction of fast growing species such as *gliricidia* and selected fruit trees.

Project Activities

The year 1991 marked the third year of implementation of the IRD Project at Moraikobai. Programmed actions continued within the four stated activities:

- (i) Interacting and collaborating with the community in problem identification, planning and evaluating community programmes and activities.
- (ii) Planning and testing of small farm production, agro-processing and agro-forestry systems and promoting appropriate applications and technology transfer.
- (iii) Organizing and supporting community women and women's groups and collaborating in training and development of relevant community skills to generate productive employment.
- (iv) Promoting and supporting the provision and general improvement of social and physical infrastructure essential for the development of the community and improvement in welfare.

The project worked with the community to improve skills in management and organization, as well as giving training in agro-forestry, pest management, handicraft, public health, nutrition and environment improvement.

During the year various government agencies continued to collaborate with the project to implement selected strategies for the benefit of the community.

Major Highlights

Project implementation was intensified with the appointment of a Local Project Coordinator, with the assigned responsibility of coordinating the follow up work of the project on a day-to-day basis.

Construction of a nursery school was undertaken as a major collaborative effort among Region 5 Regional Democratic Council, Ministry of Health, Youth Challenge International (a Canadian-Based organization), the Moraikobai Community and the Project Staff during the months of April and May. Other collaborative activities included administering inoculations, Primary Health Care Education, eye examinations and distribution of spectacles.

Training in culture and socio drama culminated in

two Cultural (dramatic) presentations which were recorded and aired on local radio. The presentations were done at Mashramani (February 23) and at Christmas and included many items of an indigenous nature.

This year saw the intensification of handicraft production through training in improved quality and design, together with the securing of new markets, producers (mainly women) were able to realize greater income. On-farm demonstrations and training activities in mixed cropping systems continues to encourage greater participation by farmers.

Training Activities Conducted

Activity	Number	Persons Involved
Community Leaders Trained	2	16
Hormone Treatment of Pineapples	1	16
Post-harvest Management		
1. Cassava	1	20
2. Pineapple	1	20
Pest Management	3	20
Forestry Inventory Procedures	1	8
Building Trades (carpentry)	1	15
Handicraft	4	30
Socio Drama	2	15
Nutrition & Public Health and Family Life Education	4	70

Two home garden demonstrations using inter-cropping systems which included quick growing legume species *gliricida* (*Gliricidia sepium*) and *Leucaena* (*L. leucocephala*) and cash crops — peanuts and food crops — cassava were established.

A nursery was established for supplying locally produced planting materials to the community; mainly indigenous material was used to build the structure. Propagated plants include citrus, West Indian cherry, carambola and avocado.

Agro-forestry activities were highlighted by a six-week training programme in forest inventory procedures to enhance the sustainable utilisation of the forest and savannah resources. Six persons from Moraikobai (including three women) and one each from St. Cuthbert's and Santa Missions were trained in this programme.

The Community continues to be depleted of many of its able-bodied men who have been recruited to work in the extractive sectors (gold and lumber).

This places added burden on those who remain, particularly the women folk. The project has therefore intensified its activities among women and youth with a satisfactory level of response and results.

Communication between the Office in Georgetown and the Community was improved during the year with the acquisition and installation of a long-distance radio.



Training Course — Forest Inventory Procedures — Graduating student receives certificate from CIDA representative



Harvesting Peanuts — Morakobai



Pest Management — Agri Production Assistant demonstrates use of Swing-Fog machine — Morakobai

The year 1991 was a relatively quiet year for the project "Strengthening of the Veterinary Services in Guyana" as the Animal Health Specialist was posted to IICA Headquarters in Costa Rica in April. Animal health activities resumed in November with the placement of the new Animal Health Specialist.

Following discussions with the Ministry of Agriculture, Veterinary Public Health Unit, National Dairy Development Programme (NDDP), and the Caribbean Agricultural Research and Development Institute (CARDI), the following activities were planned for 1992.

Control of Bovine Tuberculosis

Collaboration with the Ministry of Agriculture, Veterinary Public Health Unit, and Pan-American Health Organization (PAHO) in the preparation of a proposal for a national eradication programme for bovine tuberculosis in Guyana.

Training activities

Providing training in CARAPHIN, the Caribbean Animal and Plant Health Information network systems for national personnel.

Training sessions in "Principles of Veterinary Epidemiology" for Ministry of Agriculture, Regional and Public Health veterinarians. A course in veterinary epidemiology for REPAHA (Regional Educational Programme for Animal Health Assistants) students.

Baseline Surveys

Collaboration with IICA Livestock Production Specialist, CARDI, Ministry of Agriculture and REPAHA in conducting two baseline surveys of animal health for sheep and cattle. The objectives of the surveys are: disease surveillance, generation of prevalence statistics for specific diseases and to develop preventative medicine recommendations for sheep and dairy producers in Coastal Guyana.



Healthy and happy Barbados blackbelly sheep at Saint Stanislaus College Farm



MoA/CARDI/REPAHA/IICA baseline survey of sheep health in Coastal Guyana

The Project

The project continued in 1991 with equal emphasis on sheep and dairy production development as well as collaboration with CARDI in both of these areas. The project in Dairy and Sheep Production development was reformulated consistent with the guidelines of the country strategy 1992-1993 Country Strategy and the Medium Term Plan for Programme III.

Dairy Production Activities

The five model dairy farms under IICA and CARDI were monitored to obtain one more year of complete information in milk production yields, herd reproductive performance and economic status of the system.

At the Mahaica farm with a cut-and-carry system, on-farm management problems during 1990 negatively affected the overall performance of the system from mid-1991, including the generation of information which resumed in late 1991.

With the assistance of the Veterinary Diagnostic Laboratory, farms were screened for Brucellosis testing, using the Rose Bengal Reagent. All forty-four samples were negative. This reagent had revealed some "reactors" during previous tests in other model farms and a neighbouring farm. Further testing is expected to be continued in 1992.

Screening for subclinical mastitis on four of the model farms revealed quite low incidence within the lactating herd. On the other model farm over a quarter of the cows reacted to the California Mastitis Test (CMT), a finding which was consistent with farmer's continued traditional milking procedures and insanitary pen condition. This problem was rectified.

IICA collaborated with CARDI in a Milk Marketing and Processing Survey to assess some of the major constraints to dairy production on the coast. A cheese-making demonstration was conducted by a team of consultants to illustrate some possible uses of different coagulants of milk. Participants, who comprised a representative cross section of the dairy sub-sector, had the opportunity to taste three different cheeses and indicate their preferences.

A dairy production development project proposal was prepared at the request of (and submitted to) Chandisingh Secondary School on the Corentyne. The project is expected to be considered for funding in 1992 by the Canadian High Commission and the Futures (Canadian Hunger Fundation) Fund.

1991 Dairy model farms production parameters

	MAF— III	MAF— IV	MBF— II	MBF— III
Total Milk Production (L.)	7,894	14,819	13,158	5,875
Av. Lactation length/year/days	300	260	247	186
Av. Milk/Cow/Lactation (L.)	1,052	1,180	1,013	870
Av. Milk/Cow/Day (L.)	3.0	4.8	4.0	4.0
Av. No. Cows milked/day	6	6	8	4
Milk Production/ha (L.)	3,908	5,110	3,852	3,379
Stocking Rate (A.u./ha)	6.0	4.7	5.2	8.2
Calving Interval (Days)	359	362	409	371
Open Days	70	77	123	121
No. Service/Conception	1	1.6	1.4	1.3
Total Animal units	9.9	13.7	17.9	14.5
Pasture Size (ha)	1.64	0.44	3.44	1.77

Source: Supporting the development of livestock production systems in Guyana and Suriname — IICA Project in collaboration with M.P.S. Project — CARDI

1 (L. = 1.7 pints milk);

1 (Animal unit = 400 kg animal);

MAF — III = Mahaica Farm;

MAF — IV = Crane Farm (1);

MBF — II = Timehri Farm;

MBF — III = Crane Farm (2)

Sheep Production activities

Performance of the sheep cut-and-carry system at St. Stanislaus College Farm was evaluated in the light of competition for forage with the Dairy unit on the farm's limited land space. Subsequently, the forty-two ewe-system was reduced to twenty ewes. Housed on a slatted floor pen, the system produces for sale weaned Blackbelly lambs as breeding stock.

Grass trials were continued on a coastal coconut estate, towards the development of a system of sheep grazing under coconut trees. These were to determine the performance of two species of grass (*Brachiaria decumbens* and *Brachiaria brizantha*) under different shade conditions coupled with different methods of establishment of the grass. Poor quality seed and dry weather conditions confounded the results. New seeds will be acquired in 1992 and the trials will be repeated. Meanwhile on the same farm, a flock of over ninety heads of sheep which are housed within a slatted-floor pen, grazes on scrub forage under coconuts in a random rotational cycle.

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Training

Five farmers and three farm personnel completed in-service training in dairy production. Two sheep farms benefitted from training in management of internal parasites, hoof care, and feeding practices. A farm visit was conducted for ten technical personnel at two dairy model farms in West Demerara to demonstrate the cut-and-carry and rotational

grazing systems. At St. Stanislaus College Farm, students from the University of Guyana and REPAHA visited for exposure to the Dairy Production Systems. Also CARDI's pilot sheep farmers from Region #5 attended a field day on the sheep cut-and-carry system on the farm. Training activities in both sheep and dairy production will receive greater emphasis in 1992.



The demonstration of bucket-feeding of a calf for C.X.C. Agricultural Science students at field day on 'Dairy Production'



Cut-and-carry system on Dairy Farm on East Demerara



*"Agressive" growth of "Sheep Grass" (*B. brizantha*) which was planted among vegetation on a coconut estate to demonstrate suitability of a forage for weed-control and for feeding sheep.*



The implementation of this project began in 1989 in support of regional and national agricultural priorities and the acceleration of crop diversification efforts. During the year the Project Leadership moved from Barbados to Trinidad and additional resources from French Inter-Ministerial Funds for the Caribbean were attracted and direct contact established with French research institutions such as INRA, IRFA and IRAT.

In this the penultimate year of the project in the current form, this multinational action emphasized, in Guyana, training as the main tool of institutional strengthening.

Institutional Strengthening

This included on-the-job training for technicians in approaches to on-farm research, fruit production technology, nursery management, etc., and more formal training events, mainly overseas. Overseas training focused on important fruit commodities and advanced (tissue culture) propagation techniques.

Increasing the Supply of High Quality Plants

Support to farmers concentrated on the selection and propagation of locally selected cultivars and clones of Passion Fruit and W.I. Cherry. Technical support continued to be provided to both private and public sector nurseries.

Commercial Fruit Production

In 1991 commercial fruit production was supported and promoted by the generation of experiences, transfer of knowledge and dissemination of information on several aspects of the fruit commodity systems. Extension activities were centered around the network of on-farm trials established. Growers, farmers and farm operators benefitted from their direct involvement in the orientation, implementation and evaluation of the on-farm demonstrations/trials. Some of the important advances made over the previous two years were demonstrated, especially with respect to fruit production technology for Passion Fruit and West Indian Cherries — two non-traditional fruits in Guyana.

Institutional Collaboration

The Project continued to work closely with the Ministry of Agriculture which identifies the priority crops of the Government; with the National Agri-

cultural Research Institute (NARI) in several areas e.g. fruit pest and disease surveillance and technology transfer; with the Caribbean Agricultural Research and Development Institute (CARDI) in information exchange and shared technical expertise. Additionally, several other governmental and non-governmental agencies and individual enterprises benefitted from the information, advice and technical expertise available to the Project. The International Fund for Agricultural Development (IFAD)/Government of Guyana — funded East Bank Essequibo Development Project (EBEDEP), in particular, provided the kind of institutional framework that facilitated effective collaboration.

Training

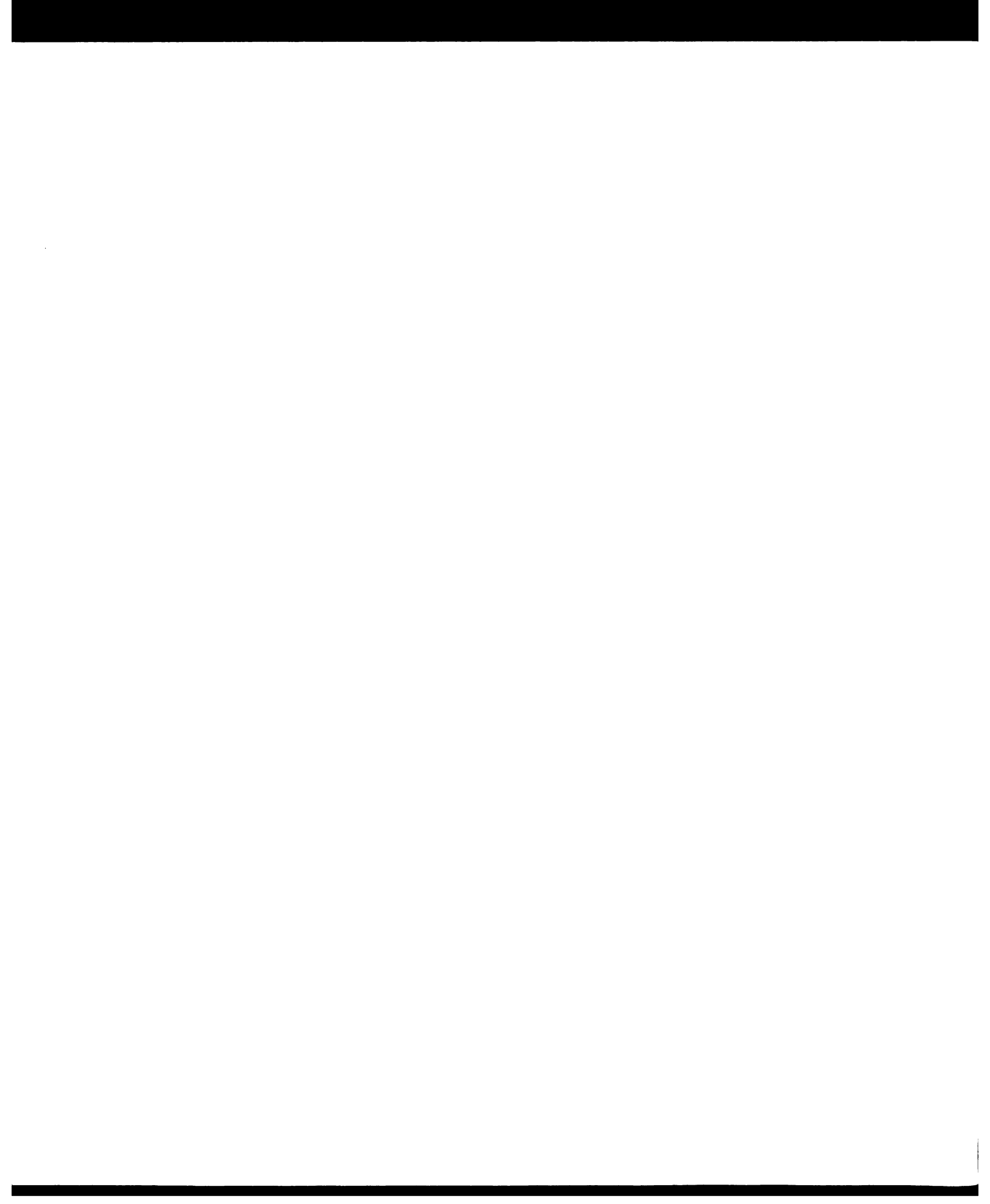
Over forty-three technicians, field assistants, farmers and nursery staff and agro-entrepreneurs were trained in different aspects of pre-production, production and marketing systems for priority fruits, ranging from propagation techniques and nursery management, through orchard care and management to post-harvest handling and treatment and small-scale processing technology. Lectures and practical sessions on nursery and orchard production and tours to nurseries and orchards were also held for over seventy-four students of secondary and tertiary level educational institutions including the Cyril Potter College of Education and the University of Guyana. The collaborating farmers and technical personnel received regular on-the-job training in on-farm research methodology in discussion sessions and on-farm and office visits.

Extension and Dissemination of Information

Production Systems for passion fruit, pineapple, plantains, *Citrus* spp. and avocado pears were demonstrated to twenty-three (23) technicians and forty-nine (49) farmers at four (4) field days held on pilot plots in operation and to inspect and to give advice to growers in Regions 2, 3, 4, 5 and 10.

Passion Fruit Production, Improved Plantain Production Practices and Producing Pineapples for Export were the subjects of the three (3) extension fact sheets produced by the project during 1991.

Copies of the first issue of the Tropical Fruits Newsletter were received and distributed. This regional Newsletter is to be produced by the Project quarterly.



Surveillance and Monitoring

A preliminary reconnaissance survey of Passion Fruit plantings in the Timehri area to assess occurrence of a new disease syndrome was conducted. Samples were sent to the Commonwealth Mycological Institute (CMI) and the Institut de Recherches sur les Fruits et Agrumes (IRFA) for identification.

During 1991 project actions intensified significantly as visible results of the on-farm demonstration/trial plots and farms began to become available for demonstration and analysis. Over the previous three years growers, nurserymen and technicians had been rapidly accumulating experience and information on the management of commercial operations involved in the production of two potentially important non-traditional fruits — Passion fruit and West Indian Cherry.

Several private fruit crop nurseries are now producing planting materials in larger quantities using improved techniques. In most cases, plants are

available for sale to the public; some others are directly associated with individual orchard expansion programmes.

Numerous requests by both local and foreign businessmen (including farmers) for technical advice and information on the prospects for investment in the fruit sub-sector have been addressed by the Project.

Pineapple exports have continued to dominate the trade in non-traditionals. There has been some movement to address the problems of fruit quality that were threatening to jeopardize the fresh fruit markets in the Caribbean. However, much more still remains to be done if this commodity is to develop into a major export commodity. On the whole and in spite of the difficulties encountered in extending the impact of activities at the farmer level, the project has achieved over 80% of its programmed tasks for 1991 and it continues to demonstrate its capacity to contribute to the development of this potentially important sub-sector.



Pest and disease of Passion Fruit identified in collaboration with NARI



Commercial Orchards — Large scale Passion Fruit production



Project Activities	US\$	Source	Total
A. National			
— Integrated Rural Community Development	18,359 8,803 8,777	IICA PL-480/GoG CIDA	<u>35,939</u>
— Strengthening of the Veterinary Services in Guyana	39,794	IICA	<u>39,794</u>
— Strengthening of the Livestock Production Systems	57,014	IICA	<u>57,014</u>
			<u>132,747</u>
B. Multinational Projects			
— Regional Project Unit for the Caribbean	16,128	IICA	
— Design of Strategies for Policy Analysis, Planning and Management in support of Agricultural Development in the Caribbean	14,043	IICA	
— Supporting the Development of Tropical Fruit in the Caribbean	25,649	IICA	
— Creation and Consolidation of the Cooperative research and Technology Transfer Programme for the South American Tropics (PROCITROPICOS)	11,980	IICA	
— Surveillance and Monitoring of Agricultural Diseases and Pests to Facilitate Increased Production Efficiency in the Caribbean	8,821	IICA/CIDA	
— Facilitating Caribbean - Latin American Linkages and Transfer of Technology for Agricultural Development	10,714	IICA	<u>87,335</u>
C. Management and Technical Services	131,331	IICA	<u>131,331</u>
D. Total Budget			<u>351,413</u>

Professional Staff

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¹Transferred to Head Office²Joined the staff during the year³Resigned during the year

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Mr Nigel Cumberbatch Animal Scientist
Mr Rowland Fletcher Country Representative**Pan-American Health Organization**Mr Peter Carr Representative
Mr Guy Felix Resident Sanitation Engineer**CARICOM Secretariat**Mr Byron Blake Director Economics and Industry
Mr Hayden Blades Director Trade and Agriculture
Mr Ronald Gordon Chief Agriculture Section
Mr Nigel Durant Senior Agricultural Economist**Canadian High Commission**Mr Cam Bowes First Secretary
Mr. V. Memdhari Project Officer
Mrs D. Lalonde Ricordi Third Secretary (Dev)**PL-480/USAID**Mr Kurt Shafer PL-480 Coordinator
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