

BIBLIOTECA CIDIA



ANNUAL REPORT 1977



Note:

This report has kept in line with the programs of IICA as concerns the information presented, in the same manner as in last year's report.

The readers are reminded that it is neither the purpose nor possible to present extremely detailed information on work accomplished in this type of publication. Those interested in further information on a specific project or activity, may obtain it from the IICA representative in each country.

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The Front cover is a picture of the hammered copper mural given to IICA by its Professional and General Services Personnel, with the following dedication: "TO IICA WITH PRIDE AND ADMIRATION FOR ITS LABOUR AND RENEWED FAITH IN ITS HUMANIST DOCTRINE". The Mural is in one of the Conference Rooms at IICA Headquarters, San José, Costa Rica.

Centro Interamericano de Documentación
e Información Agrícola

14 MAR 1978

IICA—CIDIA



ANNUAL REPORT 1977

General Directorate — Headquarters
San Jose, Costa Rica

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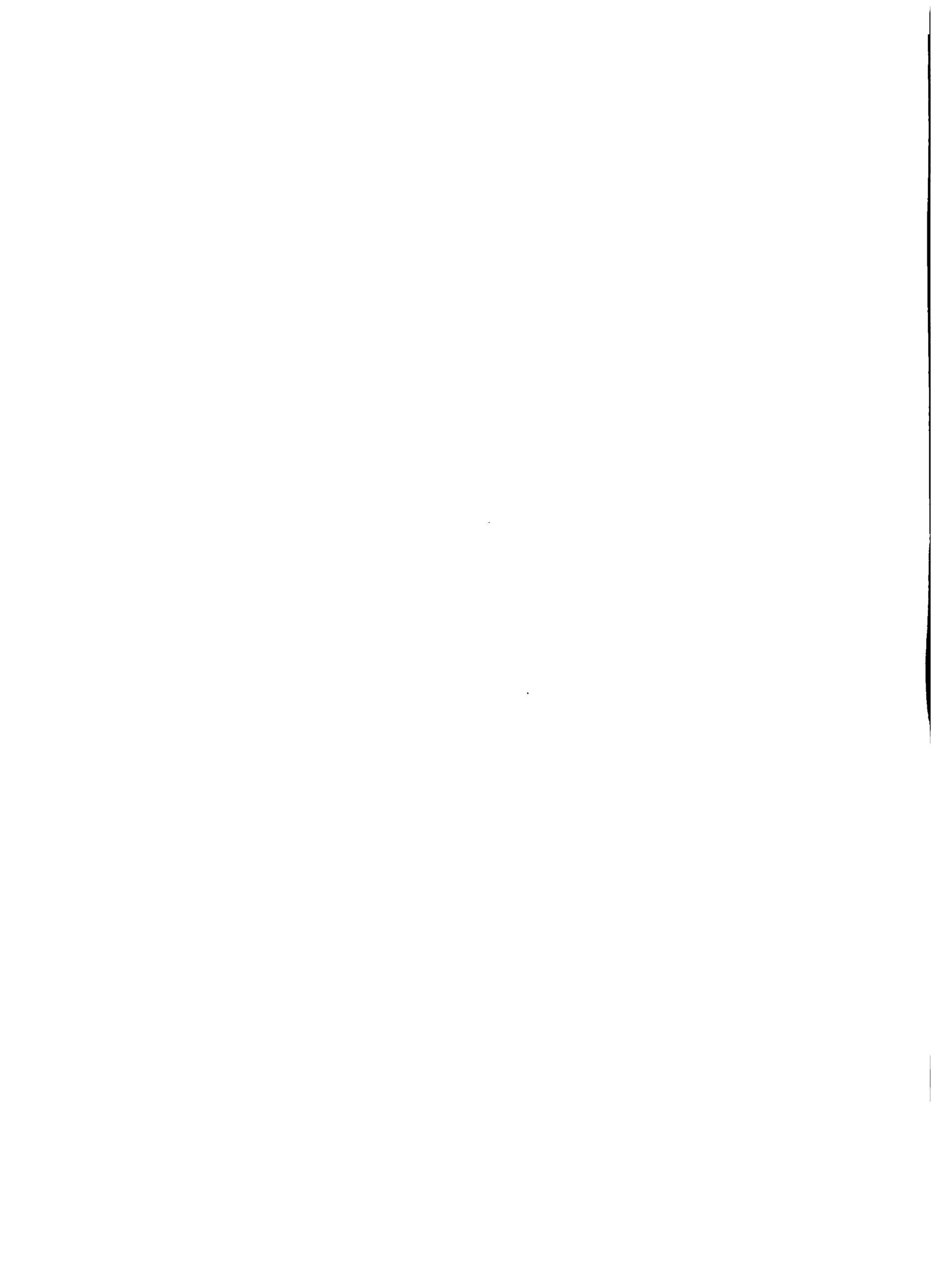
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INTRODUCTION



INTRODUCTION

As one of my responsibilities as Director General of the Inter-American Institute of Agricultural Sciences, I hereby submit the Annual Report of IICA – for the period 1 July 1976 through 30 June 1977 – for due consideration by the honorable members of the Board of Directors of IICA and of the General Assembly of the Organization of American States (OAS).

This is the second report which I have presented within my second term of office as Director General of IICA, which began in January 1976. I am pleased to be able to report that within this period, IICA has received the sustained support of its member countries, as is evident from the approval of Resolution IICA/RAJD/Res.53(16/77) on May 17, 1977 in Santo Domingo, Dominican Republic, at the Sixteenth Annual Meeting of the Board of Directors. This Resolution concerns the approval of the Medium-term Indicative Plan to operationalize IICA's General Plan and will govern the destiny and actions of the Institute over the next five years. The Board of Directors recognized the Medium-term Indicative Plan as a conceptual framework and appropriate guide to orient IICA actions, and recommended that it be evaluated periodically, taking the viewpoints of the different member countries into due account, so as to up-date it in line with their needs and interests.

This new stage, as characterized by the presentation and approval of the Medium-term Indicative Plan (prepared at the behest of the Board of Directors – Resolution IICA/RAJD/Res.40(14/75), and the restructuring of the Lines of Action, is aimed at achieving the greatest possible efficiency in the use of available institutional resources to attain our objectives and to be of service to our member countries.

Of considerable importance is the fact that Resolution No. 22(14/75) was approved at the Fourteenth Annual Meeting of the Board of Directors held in Ottawa, Canada, indicating: "That for now, present objectives of the General Plan as well as its basic strategy and the characteristics of IICA's functions should remain unchanged". Thus, the current effectiveness of our general normative frame of reference was confirmed. Briefly then, it may be stated that despite progress achieved in certain areas, the persistent problems of production and productivity, employment and marginality, require continuous attention to these three development aspects. Hence, the need to formulate intermediate objectives, for actions to have a bearing on the evolution of these development aspects.

Thus, the Medium-term Indicative Plan refers mainly to three specific objectives: a) to continue the systematic operationalization of the General Plan; b) to provide appropriate decision-making criteria for IICA's authorities and technical personnel, and for the planning and implementation of IICA's

technical cooperation actions; c) to provide countries with specific information concerning IICA's doctrine and concrete action possibilities.

So as to properly comply with the purpose of continuing the operationalization of the General Plan, the Medium-term Indicative Plan includes a brief description of the Lines of Action and respective programs.

With the aim of providing IICA's authorities and technical personnel with appropriate criteria for making decisions, the Indicative Plan also presents bases for the technical-administrative adjustments needed to reorient institutional policies pertaining to planning, operations, administration, personnel, external affairs, information and documentation, so as to facilitate a concentration of actions at the country level, and with the aim of ensuring greater impact through the programming and implementation of projects that have been conceived entirely within the new programs, and designed so as to provide significant support to actions undertaken by the countries themselves.

And lastly, with the aim of providing the countries with specific information, IICA submits this Plan for due consideration by the member countries –and will continue to do so in a systematic manner, through the Board of Directors– indicating the necessary changes and adjustments in its Lines of Action. At the same time, country-level action plans will be prepared, so as to ensure that these policies be implemented in support of national efforts to solve priority problems of the sector.

It is therefore advisable to establish at this time that the gradual restructuring of our technical cooperation actions, in accordance with Line and Program policies, and the greater impact of these actions at the national level, require an increase in the amount, and a redistribution, of Institute resources, as well as increased efficiency in their utilization.

In compliance with Resolution IICA/RAJD/Res.10(18/76), of the Board of Directors, as approved on April 20, 1976, I informed the Board about the completion of the headquarters building for the Executive Offices of IICA. The pertinent report was presented at the Fifteenth Annual Meeting of the Board of Directors, held in Washington, D.C., in May of that same year.

The aforementioned report summarizes the construction process up to the end of the first stage which was completed in December 1975, as per the contract subscribed with the construction firms.

Unfortunately, besides affecting construction costs during the initial stage, inflation also contributed to increased



The Director General of IICA, Dr. José Emilio G. Araujo, at the inauguration of IICA's Headquarters building. With him are: His Excellency, the President of Costa Rica, Mr. Daniel Oduber Quirós; Dr. Fernando Ortiz Sanz, Chairman of the Permanent Council of the OAS and of the Board of Directors of IICA; Dr. Rodolfo Quirós G., Minister of Agriculture of Costa Rica; Mr. Klaus Sengelmann, Minister of Agriculture of Nicaragua, and the parish priest of the township of San Isidro de Coronado.

costs during the second stage; it was therefore necessary to request the Board of Directors' approval for an additional amount of US\$ 845,087 in order to complete the building.

As explained in the report attached to the request for additional funds for the second stage, the plan to finance both stages permitted the completion of the building without resorting to high interest rate commercial loans; no increase in the Budget was needed for this purpose either nor were any of the Institute's normal program activities affected in any way.

The completed building was received by IICA as planned, so as to be able to move its offices in accordance with the project prepared for this purpose, without interrupting any of IICA's regular activities.

In general, the principal characteristics of IICA's Headquarters building are:

- a. A roofed area of 7,243 square meters.
- b. Green areas and roads occupying 7,200 square meters.
- c. 1,085 square meters of outside parking space for vehicles.
- d. The main building is mostly one story with a two-story section; the upper part has space for conferences, meeting and seminars as well as housing the Inter-American Centre for Agricultural Documentation and Information (CIDIA).

e. There is a spacious courtyard in the middle, and there are a number of green areas intended for gardens.

f. The main building lodges the offices of the Director General, Deputy Director General, the Deputy Directors' Offices for Operation and for Planning (including offices for their supporting staffs), CIDIA, Simon Bolivar Fund, PIADIC, IICA's Office in Costa Rica, the Printshop and the Office of the Organization of American States (OAS) in Costa Rica.

Once again I would like to express our sincerest appreciation to the Government of Costa Rica, the Kellogg Foundation and the Agency for International Development (AID) of the Government of the United States of America, for all the aid provided: the donation of land and cash contributions, accepting the utilization of funds for the construction of the building, today a dream come true.

We had the great pleasure to officially inaugurate our Headquarters building on October 7, 1976, in a simple, emotive ceremony, which commits us even more strongly to serve, with the aim of fostering the development of the agrarian sector of our countries. At this ceremony, we were honored with the presence of His Excellency the President of Costa Rica, Lic. Daniel Oduber Quirós; the OAS Assistant Secretary General, Dr. Jorge Luis Zelaya Coronado; Dr. Fernando Ortiz Sanz, Chairman of the Board of Directors of IICA and of the Permanent Council of the OAS; the Minister of Agriculture of Costa Rica, Dr. Rodolfo Quirós Guardia; and the Ministers of Agriculture of Guatemala and Nicaragua, as



Aerial view of IICA Headquarters, San José, Costa Rica.

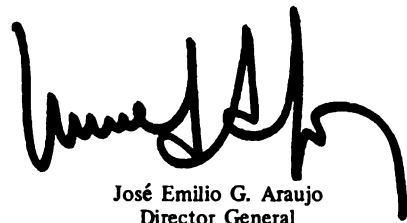


Dr. Jorge Luis Zelaya Coronado, Assitant Secretary General of the OAS, His Excellency, Mr. Daniel Oduber Quirós, President of the Republic of Costa Rica, and Dr. José Emilio G. Araujo, Director General of IICA, at the inauguration of IICA's Headquarters building in San José, Costa Rica, October 1976.

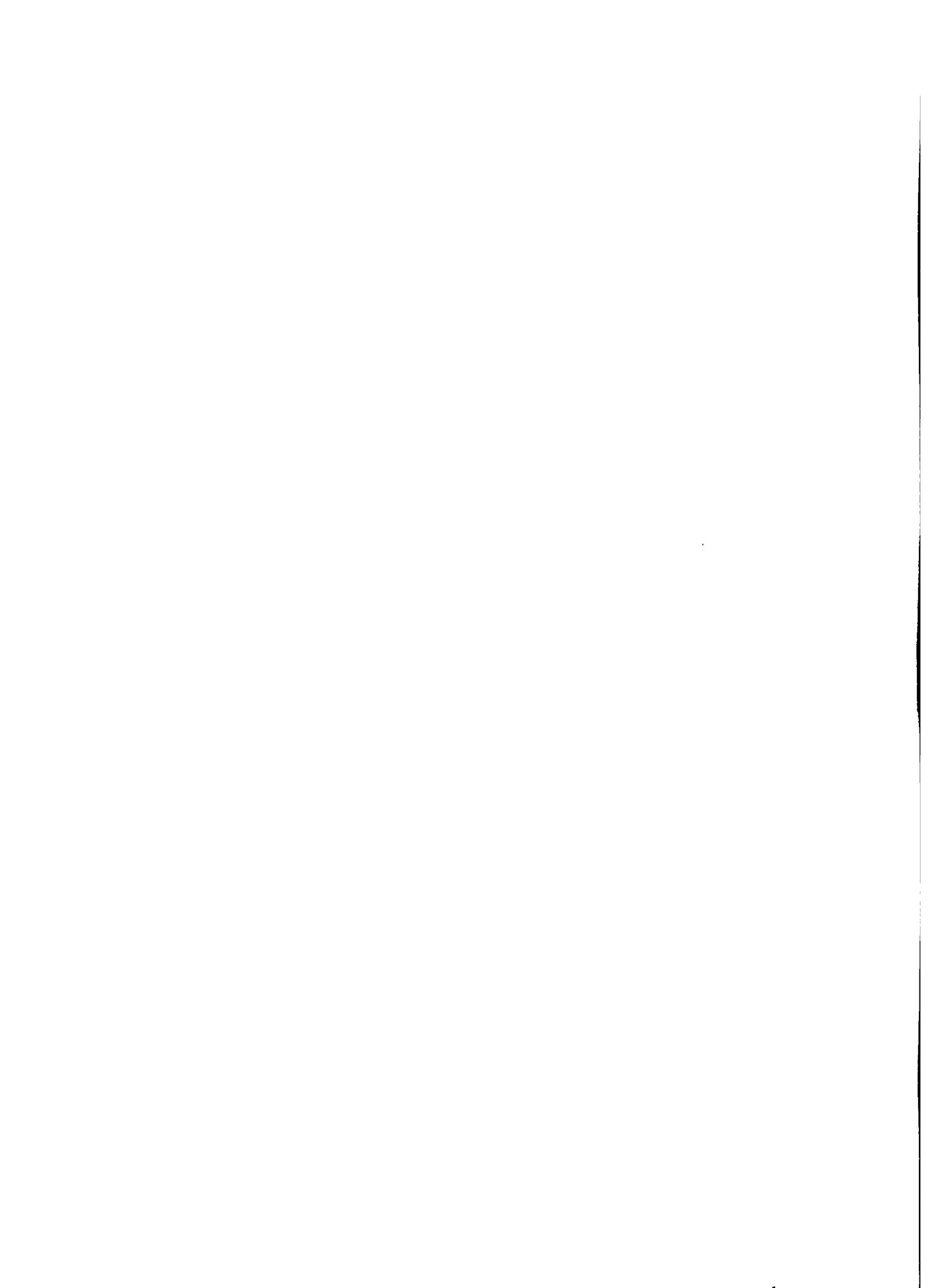
well as high-level officials of member countries; diplomats; representatives of extra-continental countries and national officials of our host country, Costa Rica.

In this brief introduction to our Annual Report, I have wished to stress the more important accomplishments of the period, within an institutional context; that is, the approval by the member countries of our Medium-term Indicative Plan so as to operationalize IICA's General Plan, and the inauguration of our Headquarters Building in San José, Costa Rica, thereby ensuring the institution of the necessary physical infrastructure so as to assure the best possible performance of the administration, planning, programming, technical supervision and support functions of an institution such as ours, at the service of the countries of this hemisphere.

A more thorough appraisal of our work within each Line of Action and in the specific fields of our special projects and programs may be obtained from the following chapters of the Report.



José Emilio G. Araujo
Director General



Chapter I.
INSTITUTIONAL RELATIONS



Chapter I

INSTITUTIONAL RELATIONS

Introduction

IICA submits its Annual Report in its present form, in accordance with a mandate of the General Assembly of the Organization of American States (Resolution AG/Res.171 (IV-0/74)). Thus, a brief summary of the origins and structure of the institution are given in this chapter, in compliance with OAS General Assembly mandates, and of the Institute's relations with other agencies of the Inter-American System, regional and world-wide organizations and extra-continental countries.

Founding

The Inter-American Institute of Agricultural Sciences (IICA) is the specialized agency of the OAS for the agricultural sector. It was founded in 1942 by the American governments to foster the economic and social development of their respective countries through teaching, training of personnel, research, consultation and communications, as related to the field of agriculture.

Organization

IICA is an autonomous inter-governmental institution. It has its own convention, and carries on its work through the following structural organization:

- a. The General Directorate, at IICA Headquarters in San José, Costa Rica, with a Deputy Director General's Office, and Associate Deputy Director General's Offices for Operations and Planning. The Inter-American Centre for Agricultural Documentation and Information (CIDIA) is also housed at Headquarters.
- b. Four Regional Offices (for the Andean, Antilles, Northern and Southern Zones, respectively).
- c. Twenty-four National Offices, one in each of the member countries.

Board of Directors

The highest governing authority of IICA rests with the Board of Directors, which is comprised of the same representatives of the American States to the Permanent Council of the Organization of American States (OAS) and meets in Washington, D.C., the headquarters of that organization. Once a year, a meeting is also held with the participation of high-level representatives of the ministries or secretariats of agriculture or special representatives of the American governments. The meeting is held in a different country each year at the invitation of the respective government. Before the meeting, a Special Committee appointed by the Board of Directors,

assembles to study and present an opinion on the proposed program budget prepared by the Office of the Director General; to suggest guidelines for its preparation; to examine, study and present an opinion on all other matters entrusted to it specifically, as well as any proposals that the Representatives of the Member States and the Director General may wish to submit to the Board for consideration at its annual meetings.

General Objectives

To assist the American States to stimulate and promote rural development as a means of attaining the general development and well-being of the rural sector and to support their efforts to:

- a. Increase agricultural production and productivity in line with increases in population and purchasing power, especially those products that may offer competition on world markets and those that tend to improve the food diet of the population.
- b. Increase employment opportunities in the rural sector in proportion to the growth rate of the active rural population.
- c. Increase the participation of the rural population in development activities, reducing its non-participation to levels that allow for a continuous significant transformation towards equal opportunities for all active members of the rural community.

To achieve these objectives, the basic strategy which has been adopted consists in the strengthening of institutions which dedicate their efforts in the American nations to agricultural development.

General Plan

The General Plan is a pragmatic interpretation of IICA's objectives and the basic principles of its Convention, in response to the ever-changing conditions of the agricultural and development processes within the rural sector of the American States, as expressed in the Director General's Message to the Board of Directors: "A Hemispheric and Humanistic Projection for the decade 1971-1980".

The Plan defines IICA's action strategies and indicates the functions, lines of action, methods of operation and the necessary approaches in terms of structure, organic functioning, personnel and financial aspects.

The Director General implements Plan policies, issuing specific instructions concerning on-going progress of the Lines of Action, and devising operational strategies with respect to



A joint inaugural ceremony was held on May 16, 1977 in the National Congress building, Santo Domingo, of the Sixteenth Annual Meeting of the Board of Directors and the Twenty-second Meeting of the Technical Advisory Council of the Inter-American Institute of Agricultural Sciences. The following dignitaries presided over the session: His Excellency Mr. Carlos Rafael Goico Morales, Vice-President of the Dominican Republic; Rear Admiral Ramón Emilio Jimenez, State Secretary for Foreign Affairs; Dr. Santiago Cruz López, State Secretary for Agriculture; the Representative of the United States of America, Dr. Quentin M. West; the Director General of IICA, Dr. José Emilio G. Araujo; the Deputy Director General of IICA, Mr. Carlos Madrid, and IICA's Regional Director for the Antilles Zone, Dr. Antonio Pinchinat.

programs, administrative organization, personnel and financial affairs.

The General Plan is a dynamic, flexible instrument. In accordance, therefore, with the characteristics and on the basis of the fundamental concepts of a humanistic rural development, as adopted by IICA, the Board of Directors approved the report submitted by the Director General in 1976, containing the outline as to how the programs will be increasingly oriented and up-dated in line with the provisions of the General Plan. To this end, the Director General was requested by the Board of Directors to prepare a Five-year Plan, ensuring the necessary flexibility of IICA's actions over the next five year period, within the so-called "humanistic rural development projection", so as to assure the progressive application of the above-mentioned General Plan.

National Committees

The National Program Committees have also been made a part of the Institute's official programming policy which establishes that the Committees are the first link in the decision-making chain which culminates in the approval by the Board of Directors of the Program-Budget.

It is our intention to have the IICA staff members in the countries become intimately acquainted with the needs of each country. To this end, we feel that the most expeditious method is to have the sectorial agricultural planning offices report the technical cooperation requirements of the country directly to the Institute, indicating what collaboration IICA can provide.

Lines of Action

These define and focus IICA's activities, through the Program-Budget, to promote the improvement of the institutional systems of the rural sector. They cover the following fields:

- Information and Documentation on Rural Development
- Education for Rural Development
- Research and Transfer of Agricultural Technology
- Agricultural Production, Productivity and Marketing
- Regional Rural Development
- Structural Changes and "Campesino" Organization
- Formulation and Administration of Agricultural Policy

Instruments of Action

To accomplish its technical cooperation objectives, IICA relies on the following tools:

- Teaching with the aim of training individuals in the technical as well as human aspects so as to ensure greater participation in the development process, and to make them aware of the obstacles, limitations to, and possibilities for accelerating the development process.



In May 1977, the Director General of IICA, Dr. José Emilio G. Araujo, and the Director General of CIAT, Dr. John L. Nickel, signed a cooperative agreement in Cali, Colombia, to get a series of joint rural development programs underway. Some of these programs are already being implemented.

- Training, in the preparation of projects for the improvement of institutional systems and their agencies.
- Research, the main purpose of which is to produce new knowledge.
- Direct advisory services to help apply knowledge to the solution of problems, based on the experience of technicians, technical teams, or on the results of research.
- The work of permanent groups or committees whose main function is to coordinate the efforts of institutions and to solve specific problems.
- Support professional associations to help them acquire the capability to achieve their objectives on their own.

OAS General Assembly Mandates

Since the Seventh Inter-American Conference on Agriculture had to be postponed due to circumstances beyond the control of IICA's General Directorate, and could not be held until after June 30, 1977, the Board of Directors of IICA approved Resolution IICA/RAJD/Res.56(16/77) at the Sixteenth Annual Meeting, authorizing the Director General to initiate negotiations to change the site of the Conference and to set new dates, as well as to hold the sum of US\$ 40,000 in reserve, to be used for Conference purposes.

In compliance with this Resolution, then, the governments of the countries of Central America and the Caribbean were duly consulted as to a new Conference site. On June 30,

1977, the government of Honduras offered to host the Conference in the city of Tegucigalpa.

Permanent Board of Directors

1. *Protocol of Amendment to the Convention:*— Comments and observations were received from seventeen member countries (Argentina, Bolivia, Brazil, Canada, Chile, Costa Rica, Ecuador, Guyana, Haiti, Honduras, Dominican Republic, Mexico, Nicaragua, Panama, Peru, Uruguay and Venezuela) on the second version of the draft Protocol of Amendment. The Permanent Committee of the Board of Directors therefore agreed to create a Working Group to review the preliminary draft of the Protocol, taking the observations and comments received into due consideration.

This Working Group was composed of Representatives of Argentina, Brazil, Canada, Costa Rica, the United States of America, Mexico and Venezuela, and was chaired by the United States. Since the preliminary draft of the Protocol introduces in-depth changes into the Convention currently in force, it was agreed that the preliminary draft should be adjusted so as to become a new, proposed Convention, to encompass the scope of the draft Protocol of Amendment, taking due care to assure continuity between the Institute and the agency which could result from a new Convention.

The proposed changes must still be submitted to formal vote within the Working Group. Immediately thereafter, the Permanent Committee will study the Report of the



Dr. Norman Borlaug, Nobel Peace Prize winner in 1970, and CIMMYT, Mexico staff member, visits IICA to discuss possible areas for technical cooperation endeavors. High-level IICA staff members accompany him.

Working Group, and will submit the text of a new Convention to the Board of Directors for approval and subsequent signature and ratification by the governments of IICA's member countries.

2. *General Standards to Govern the Operation of the General Directorate of IICA:*— The Permanent Committee of the Board of Directors agreed to establish a Working Group to review the draft version of the General Standards proposed by the Director General, in compliance with Resolution IICA/RAJD/Res.7(13/74). This Working Group was composed of the Representatives of Canada, Chile and the United States of America, and was chaired by the Representative of Canada.

Once the Working Group had revised the draft version, the Permanent Committee studied the matter again, and agreed to inform the Board of Directors that a draft version of the General Standards had been prepared. However, since the approval of the Protocol of Amendment to the Convention was still pending, the prior approval of the Standards was felt to be premature. The Board of Directors agreed with this opinion.

3. *Adjustments of the Quota Percentage Scale:*— The Permanent Committee of the Board of Directors continued with the study of adjusting the percentage scale for quotas, as recommended at the Twelfth Annual Meeting of the Board of Directors. The completion of these studies is still pending, since several points must still be clarified which require a unanimous vote, according to the Legal Matters Department, if changes in the quota percentage scale are to be approved.
4. *Change from the Present Fiscal Period to a Calendar Year:* — The fiscal periods of eighteen Member States of IICA now begin on 1 January and the major contributor

has changed the beginning of its fiscal period from 1 July to 1 October. In view of the above, the General Director consulted the Board of Directors as to the advisability of changing IICA's current fiscal period to the calendar year, with the aim of being more in line with the fiscal period of the majority of the Member States, and thereby facilitating a more uniform cash flow. This change would also serve to facilitate coordination of OAS General Secretariat and IICA Programs. The OAS Department of Legal Affairs has stated that, if a change in the Institute's fiscal period to a calendar year is justified, it could be approved by means of a resolution, as long as the Contracting States are unanimously in favor. On this basis, then, the Permanent Committee agreed to recommend a change in the fiscal period of IICA. This would need the unanimous acceptance of IICA's Contracting States for approval. A resolution on this matter was unanimously approved by the Member States participating in a meeting of the Board of Directors, and final approval is pending the decision of five Delegations that were absent when the resolution was presented.

5. *Quotas from Barbados and Trinidad-Tobago for the 1975-76 Fiscal Period:*— As Barbados and Trinidad-Tobago adhered to the Convention of the Institute on 17 February and 3 March, respectively, quotas had to be set for these new Member States, proportional to their length of time as Members, within the 1975-76 fiscal period. Resolution IICA/JD/Res.12(22/76) was then approved, setting the contributions from Barbados and Trinidad-Tobago at US\$ 1,334 and US\$ 2,110, respectively.
6. *Help for Nicaragua:*— The Director General was authorized to use US\$ 25,000 to help Nicaragua in its efforts to combat the coffee rust disease which is threatening the coffee plantations throughout Central America.
7. *Final Report on the Construction of IICA's Headquarters Building:*— The final report on the construction of IICA's Headquarters building in San José, Costa Rica was studied. The Director General of the Institute and other directive and executive personnel were then congratulated on the successful completion of the building.

Annual Meeting of the Board of Directors

As the Government of the Dominican Republic had offered to host the Sixteenth Annual Meeting of the Board of Directors, and the Twenty-second Meeting of the Technical Advisory Council, they were held in Santo Domingo, from May 11 through 19, 1977.

The following resolutions were approved at the Sixteenth Annual Meeting of the Board:

- Medium-term Indicative Plan
- Program Evaluation
- Topics for the Special Committee
- Postponement of the Seventh Inter-American Conference on Agriculture
- Programs and Budget Allocations
- Quota Scale
- Simon Bolivar Fund Program-Budget
- Contracts, Agreements, Contributions and Grants

- Furnishings and Equipment for the Headquarters Building
- Control of the Coffee Rust Disease, and the Improvement of Coffee Production in the Countries of the Northern Zone
- Inter-American Rural Youth Year
- Duration of the Annual Meetings of the Board of Directors, Special Committee and Technical Advisory Council
- Site and Date of the Seventeenth Annual Meeting

Inter-American Development Bank

1. *Cooperative Agricultural Research Program in the Southern Cone:*— Several points were discussed with the Bank, with respect to some adjustments in the Plan of Operations and the Agreement for the implementation of the Program. This Program has been approved by the Bank Directorate; subscription to the Agreement by participant governments is needed before IICA, as executor agency, may get activities underway.
2. *Research Program for the Andean Zone:*— Arrangements are being made to hold a meeting of Agricultural Directors of Bolivia, Colombia, Ecuador, Peru and Venezuela so as to establish bases for such a program, taking into due account the budget study formulated by the IDB-IICA mission that visited the research institutions of these countries.
3. *Integral Rural Education in Haiti:*— The Bank Directorate approved the Integrated Rural Education Project in Haiti, which had been prepared by IICA as per an agreement with IDB. The signature of the government of Haiti on the pertinent agreement is needed, before IICA can get activities underway on this project, as executor agency.
4. *International Group for Agricultural Development in Latin America and the Caribbean (IGAD/LAC):*— As one of the international member agencies of this Group, IICA has attended the plenary meetings and those of the IGAD/LAC Working Group. The following topics were discussed at these meetings: Post-harvest technologies in Central America; the Inter-American Program to Study Beef and the Aphotose Fever (PIPECA); and a Plan for the Evaluation of IGAD/LAC.

IICA cooperated with IGAD/LAC on preparing the terms of reference for the topic of Post-harvest technologies in Central America, and coordinated the first stage of the IGAD/LAC mission to Central America and Panama to study this matter. Arrangements were also being made to obtain US\$ 8,000 help from IGAD/LAC to hold the International Seminar on Post-harvest Losses in Agricultural Products throughout the Caribbean and Central American area. This seminar was sponsored by the Dominican Republic and IICA.

5. *Coordination of the Artibonite Valley Project:*— At the behest of the government of Haiti, IICA has been accepted by the Bank to coordinate a non-reimbursable Technical Cooperation Agreement between Haiti and the Bank, to strengthen the administrative, technical and financial structures of the Artibonite Valley Development Agency.



Dr. Clifton Wharton, Jr., President of the University of Michigan in the United States of America and Dr. José Emilio G. Araujo, sign a cooperative agreement in the presence of University and IICA staff members.

Organization of American States

1. *Joint OAS-IICA Coordinating Committee:*— The Committee held two meetings so as to define coordination relationships and possible areas for coordinated or joint action. Sufficient progress has not been made on this matter.
2. *Seventh Inter-American Conference on Agriculture:*— All pertinent arrangements with respect to convening the Conference, preparing the Conference Regulations and the Agreement between the Government of Honduras, the OAS General Secretariat and IICA on holding the Conference in that country, were duly made. IICA also cooperated with the General Secretariat on preparing the basic working documents of the Conference; the OAS also collaborated through the provision of document control services and the installation and management of the electronic equipment in the different Conference rooms.
3. *IICA participation on the OAS Scholarship committee:*— IICA participated in the study and evaluation of candidates for scholarships presented by the Member States, in the areas of agriculture and rural development.
4. *IICA Representation on the different OAS Agencies:*— IICA participated as official "observer" at the following meeting:

Inter-American Economic and Social Council (CIES)
 Inter-American Women's Commission
 Permanent Executive Committee of CIES
 General Assembly
 Permanent Executive Committee of CIECC

5. *Contacts with Accredited Missions at the OAS:*— A number of contacts have been made with the Ambassadors and other members of some of the Permanent Missions to the OAS, related to: the adherence of Grenada and Surinam to the IICA Convention; the processing of Basic Agreements with Barbados and Trinidad-Tobago; and holding the Sixteenth Annual Meeting of the Board of Directors.
6. *Permanent Observers to the OAS:*— Contacts were made with the Mission of Egypt and Portugal, and information about IICA provided, with the aim of encouraging the governments of these countries to become Permanent Observers of IICA.

A draft of a General Cooperation Agreement between the Government of Spain and the Institute was presented to the Spanish Mission to the OAS for study; the initial reaction of the Government of Spain has been favorable.
7. *Administrative Tribunal:*— Several matters of interest to IICA personnel and to the Institute itself have been dealt with, based on an Agreement signed by IICA with the OAS General Secretariat.
8. *Retirement and Pensions Fund:*— Work has continued on the review of the Fund Regulations with the aim of defining the rights of IICA personnel. Other matters of interest to IICA personnel with respect to retirement and loan requests, were satisfactorily dealt with.
9. *Credit Cooperative:*— Several matters of interest to IICA personnel were dealt with, and requests for loans through the Cooperative arranged.
10. *Travel Unit:*— As per OAS requirements, a strict control has been kept of the requests for new, renewed or cancelled official travel documents, by IICA personnel.

United States Agency for International Development

1. *Agreement on Sectoral Planning and the Analysis of Agricultural Policies:*— All arrangements for the subscription to this Agreement have been made. The main objective of this agreement is to up-grade institutional capability and facilitate the implementation of sectoral planning and the analysis of agricultural and rural development policies in Latin America and the Caribbean.
2. *Agreement on the Management of Agricultural and Rural Development Projects:*— Arrangements and due processing before the subscription of this agreement have been completed. The main objective of this agreement is to back-stop the efforts of extending IICA's cooperation into the area of agricultural and rural development project management in Latin America and the Caribbean.
3. *Marketing Project:*— All arrangements have been made to sign an amendment to this Agreement, extending it to 31 May 1977.
4. *Crop Credit-Insurance Project:*— Preliminary contacts have been made to explore the possibilities of an agreement with USAID in this field.

U. S. Department of Agriculture (USDA)

Relationships with the U. S. Department of Agriculture are increasing. Representatives of this agency participated on IICA's Board of Directors to study and approve the Institute

Program-Budget. USDA personnel have also participated on various technical activities to back-stop specific IICA programs and events, such as preparing one of the basic working documents for the Seventh Inter-American Conference on Agriculture; the Agricultural Project Management Project, particularly in the area of training; and the Latin American Seminar on Marketing Strategies for Rural Development, sponsored by IICA.

Government of Canada

1. *Regional Marketing Project in Central America Agreement (IICA-CIDA):*— Contact with CIDA has been maintained with the aim of completing all necessary arrangements to formalize an agreement whereby CIDA will contribute to the up-grading of national agricultural marketing institutions.
2. *Agreement on the Creation of a National Agricultural Marketing Service (SENECA) in Haiti:*— IICA-Washington has cooperated on several activities related to the signing of a Haiti/IICA/CIDA Agreement for this purpose.
3. *Other Canadian Institutions:*— IICA's range of contacts with other technical agencies in Canada has broadened, including Agriculture Canada, several universities, the Union of Cooperatives and IDRC (International Development Research Centre).

Other Agencies and Institutions

1. *Title XII:*— IICA has been in constant contact with Title XII authorities particularly with the Executive Secretariat of BIFAD and universities, at the following events: a) International Development Conference, held at the Virginia Polytechnic Institute; b) Annual Convention of the Association of Land Grant Universities; and c) U. S. Universities and Title XII Conference, held in Minnesota.
2. *U. S. Universities:*— IICA-Washington cooperated on the processing for signature of Agreements with Iowa State, Michigan State and Cornell Universities in the area of technical cooperation for rural development purposes in Latin America and the Caribbean. IICA also collaborated with Cornell University on preparing a project to be implemented under the Global Agreement. Progress was also made towards the signature of a Cooperation Agreement with the Midwest Consortium for International Activities, Inc.
3. *Other U. S. Institutions:*— IICA has been in contact with the National Academy of Sciences, particularly with respect to its activities in the field of post-harvest food losses and agroindustrial development; with the League for International Food Education; and with the International Food Policy Research Institute.
4. *World Bank:*— IICA is in touch with World Bank authorities, mainly with the Department of Agriculture Projects, Office for Latin America and with the Agricultural and Rural Development Department. Efforts have been made to establish the necessary linkages between the Project Management Project of IICA and the World Bank; a presentation of IICA's activities was made at an internal Bank Seminar; Bank participation at the Seminar on the Development of Integrated Agricultural Projects in Bolivia, was arranged.
5. *Relationships with FAO:*— The close working relationship between FAO and IICA has continued. Information

has been exchanged on FAO and IICA programs being carried out throughout Latin America and the Caribbean in the field of Agricultural Marketing, and on the technical personnel which both agencies have appointed to implement these programs.

Moreover, IICA attended the OECD/FAO International Seminar held in Paris, which dealt with critical aspects of the marketing systems in developing countries. The possibility of increased cooperation between IICA and FAO was discussed, at the level of a project in Latin America.

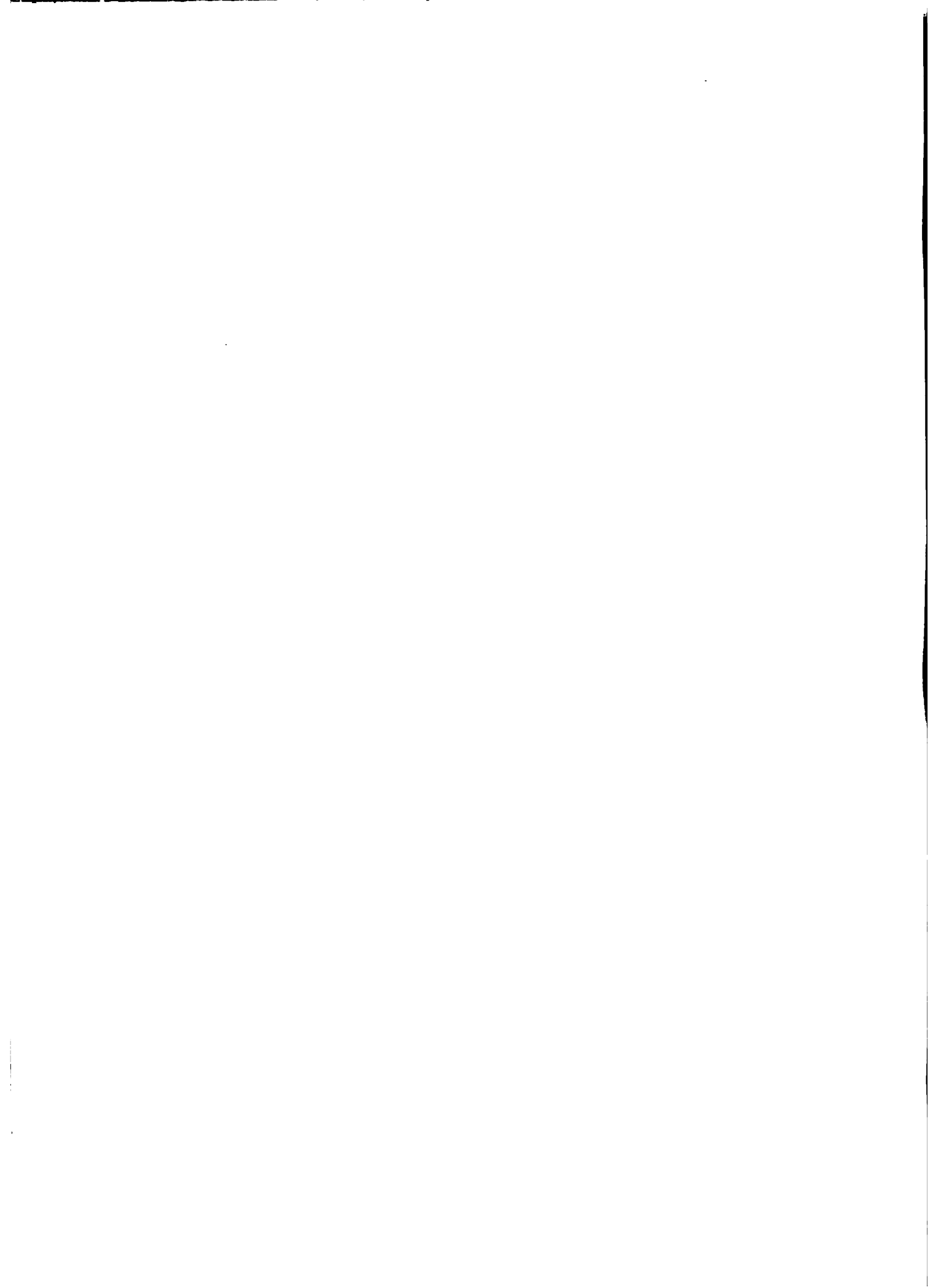
Relationships and Cooperation with Extra-continental countries

IICA is in permanent contact with the extra-continental countries that form a part of the Permanent Observer group of our institution. We have received sustained support from the

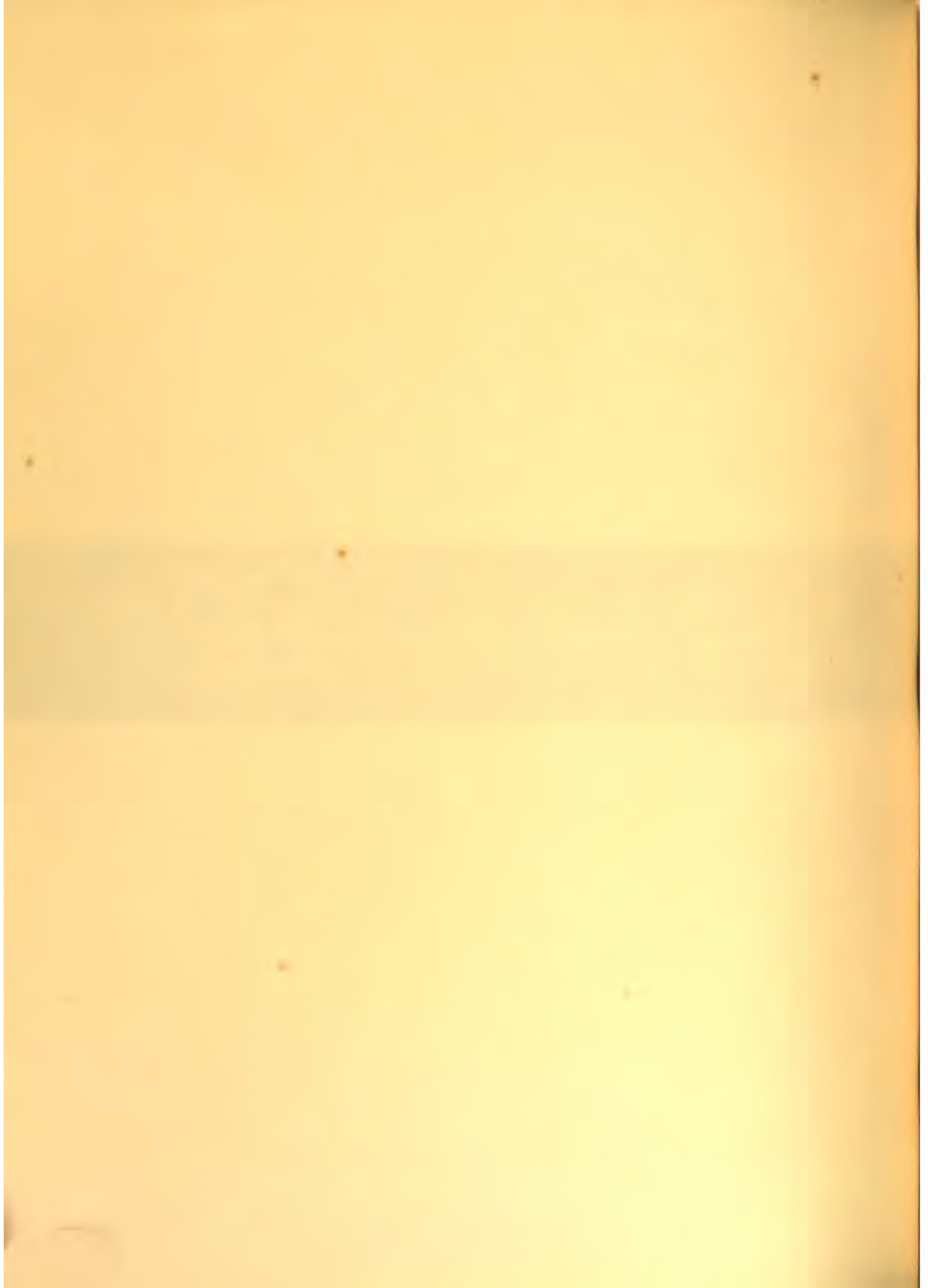
Governments of Holland, England and France, on programs underway at the Tropical Research and Training Center (CATIE) in Turrialba, particularly with respect to small farmer cropping systems, forestry and the translation of publications. The Government of Germany has also provided substantial support on CATIE and IICA work, specifically in the fields of forest sciences and "campesino" associative forms of production.

Spain and Israel have also continued to provide support in the fields of "campesino" organization, integrated agricultural rural development projects, documentation and rural youth.

Several technical missions of Japanese government agencies have been received, to discuss possible areas for future technical cooperation between the Government of Japan and IICA.



Chapter II.
INTENSIVE UTILIZATION OF AGRICULTURE
IN IRRIGATED AREAS



Chapter II

INTENSIVE UTILIZATION OF AGRICULTURE IN IRRIGATED AREAS

Introduction

There is no question that the areas in Latin America under irrigation and those apt for irrigation, as well as the humid tropics regions of the developing world should and could contribute significantly to attaining the common objective of increasing food production to progressively and adequately satisfy the legitimate aspiration of our growing populations for improved nutritional levels and better standards of living.

Those responsible for agricultural development in the countries of the region, have already been giving priority attention at recent meetings, to the identification of common obstacles which must be removed so as to assure that irrigated and tropical areas do, in fact, contribute significantly and rapidly, to increasing the world's food production and to seeking solutions that will facilitate the eradication or minimization of these obstacles, insofar as possible.

Nonetheless, conclusions reached in recent studies carried out in Latin America, would indicate that the gap is widening daily, with respect to covering food production needs, and a more in-depth study of the problems involved is essential so as to seek more pertinent solutions.

Obviously this is not easy, since development priorities differ from country to country, and specific national problems in each country, require appropriate solutions which may not function elsewhere. However, many of the problems have already been identified, and some countries have already started vigorous corrective actions, as recommended. It is hoped therefore, that the suggestions set forth—recognizing the obvious limitations of all generalizations—may be useful to foster a valuable exchange of ideas and experiences so as to attain the in-depth appraisal of the situation that is needed.

Total agricultural and food production: current situation

1. Evolution of the physical volume of production

The volume of Latin American agricultural production increased at an average yearly rate of 3.1 percent between 1970 and 1974; this figure was largely influenced by the 4.8 percent increase registered for the period between 1973 and 1974. Relatively marked changes in annual volume attained are included in this rate of increase as well as differences between the agricultural and animal husbandry sectors.

In crops, the expanded production of oil-producing seed, particularly soybeans (mostly dryland farming) was outstanding, since annual increases registered since 1972, were

over 10 percent, with a 20.4 percent increase in 1974; the volume of grains—the item with the largest share of total physical volume in crops (29.7 percent)—also increased in a sustained manner, as did sugar-producing crops and fruits.

Bovine cattle contributed approximately two-thirds of the total animal husbandry production, but slaughtering rates had decreased from 16.7 to 14.6 percent when compared with the previous five year period, with a reduction in the beef production index from 100 in 1970 to 99.2 in 1974.

The annual average rate of increase in agricultural production between 1970 and 1974 (3.1 percent) compares favorably with the population rate of increase of 2.9 percent for the 1970-1975 period. However, the average increase rate in agricultural production was 2.6 percent between the base period (1961-1965) and 1974, or lower than the population rate of increase, resulting in a per capita production index in 1974 of 97, or lower than during the base period.

Moreover, the literature indicates that increases in agricultural production over the past decade have been due to expanding the surface area cultivated (1.7 percent), and not to increased yields (0.9 percent) *per se*.

2. Food production

According to U.S. Department of Agriculture data, total food production contributing energy to the diet of Latin American populations, has increased at an average annual rate of 2.6 percent, between 1970 and 1975, and per capita food production contributing energy, attained an index of 106 in 1970 and 104 in 1975 (1961-1965=100).

3. Domestic demand: expansion rate

The domestic demand for agricultural products has increased at about 4.7 percent a year, between 1970 and 1974 (assuming an income elasticity for food of 0.5, when comparing figures from different sources, and taking population increases and income changes into account, for the region as a whole. This value is therefore higher than agricultural production increases registered for the same period (3.1 percent).

4. Food consumption: current situation

It has been estimated that at least 50 percent of the population throughout the region, distributed amongst the very low (20 percent) and low (30 percent) income level population groups, suffer from a calory deficient daily diet. Due to higher incomes and better marketing structures in cities, the consumption of energy and protein is apparently higher in urban areas than in rural zones.

Other indicators such as housing, drinking water services, sewage, hospital beds, literacy levels, etc., emphasize the disadvantageous situation of rural areas as compared to urban zones, and justify the former being qualified as areas which "reject" (expulsion areas) the population.

Availability and use of land and water

The definitions and concepts used in Latin America to classify land varies considerably from one country to another, and so a pertinent comparison and consolidation of data is somewhat difficult. Nonetheless, there seems to be a consensus about the fact that there is an appreciable margin for possible expansion of tillable land, with current agricultural production potential estimated at 700.8 million hectares. Moreover, the use of currently cultivated surface areas could be intensified, and there are many possibilities for expanding irrigated areas, particularly in those countries where there is a notable lack of food, as for instance, throughout Central America.

The total amount of land being cultivated in Latin America today, is about 139,874,000 hectares; this includes 11,427,000 with total or supplementary irrigation facilities, or 8.2 percent of the total area under cultivation. However, it should be noted that the annual variation in water volume from water sources (mostly not regulated) on lands with irrigation systems, hinders the 100 percent intensive utilization of these areas for crops, even when combined with other factors, but it has been estimated that at least an average of 82 percent a year is possible. In addition, the annual variation in rainfall in the 128,447,000 hectares of dryland farming, gives a markedly aleatory character to production, either because of too much or too little rain. This is reflected in the relative frequency with which the countries of the region are obliged to ameliorate this effect, by declaring emergency zones and establishing moratoria or other restrictions.

Problems which limit agricultural production and productivity in areas of Latin America using irrigation

Overall efficiency of irrigation systems

As in most developing areas, the farmers use gravity irrigation methods of the simplest sort, in over 95 percent of the areas in Latin America using irrigation, with scarcely more than 60 percent efficiency. Moreover, the loss of water through the irrigation channels and distribution system, from sources to edge of the individual farm is significant; it has been calculated that in this sense also, only 60 percent efficiency is attained.

Thus, the overall efficiency of the majority of our irrigation projects, understood as the relationship between the volume of water effectively used in the evapotranspiration process by crops and the volume derived from the source of waters, varies generally between 20 and 30 percent. In other words, of every 100 m³ of water at the source, only 20 or 30 are really used in the evapotranspiration process described, although in some cases, part of the water lost may be used elsewhere, either by the use of filters, returning the water to the original stream or subterranean water levels being tapped.

Actions to upgrade the overall efficiency of irrigation systems or projects, could free significant volumes of water which could be used to irrigate neighboring areas without water. Such actions would include: sealing and improving the network of canals; raising the operative capability of personnel responsible for the distribution of irrigation waters and the conservation or maintenance of project infrastructures, and of particular importance, training farmers to improve their gravity irrigation systems or to adopt more efficient irrigation methods.

However, the results of any work to upgrade farmer irrigation practices by gravity (used by most) or by adopting more efficient methods such as spray irrigation (known for over 50 years) or drip irrigation (developed over the past ten years), depend largely on the technical assistance services provided, such as medium-term credit lines to systematize lands in the case of gravity irrigation, or to acquire equipment, in the case of spray or drip irrigation systems.

Drip irrigation has proved to be singularly advantageous for adoption in different areas for a wide range of crops, particularly fruit trees and vegetables in zones with qualitative as well as quantitative water and surface area restrictions. In view of the promising perspectives outlined above, the Program for the Conservation and Management of Land and Waters has been emphasizing activities oriented towards spreading information about the method, its advantages and its limitations. Amongst other actions along this line, were the two Latin American Seminars held on this subject, in Mendoza Argentina in March 1975, and in Torreón, Mexico in June 1977, for approximately 200 technicians with responsibilities in the development of irrigation in our countries. Mention is also made of the fact that there are approximately 10,000 hectares in Latin America and the Caribbean now using this method, and its use is spreading rapidly, particularly in Mexico, Argentina and Brazil.

Slow development of irrigation projects

As a general rule, there is an excessively long period between the completion of basic irrigation structures (such as dams, primary and secondary networks of canals, etc.), particularly in medium-sized and larger projects, and the effective implementation of irrigation *per se*, and putting the benefitted lands into production.

This, of course, is due to a number of factors such as: laws in planning which hinder the opportune expropriation of lands and adequate funding for the construction of tertiary and common-use canals which carry the water to the edge of individual farms; delays in the definition and application of policies for land expropriation purposes, as well as for the selection and settlement of beneficiary farmers on these projects; the predominant inexperience of these farmers in irrigated agriculture and the weak or inadequate extension and training services; scarcity of short and medium-term credit lines for farmers; the lack of orientation as to the most suitable crops for a given area; and a basic lack of enough experimental and demonstration stations in representative areas within the projects; inadequate provision of seed and other inputs for production purposes; the lack of available, adequate equipment, and a proper systematization of lands for irrigation purposes and cropping practices; and the lack of adequate communication channels, proper support prices, etc.

A number of examples could be given of these problems, which in extreme cases, even involve the cancellation by international financing agencies, of loans that have been more than half paid.

All these problems seriously hinder our attaining urgently needed increases in agricultural production in our countries, and the rapid attainment of the socio-economic objectives set for new irrigation projects. Hence the priority need to adopt and implement such measures as will assure the timely completion of irrigation project infrastructures, so as to get the systems underway as soon as possible to assure the sustained development of areas under irrigation.

Inadequate management of irrigation projects

The public, joint or private agencies responsible for managing irrigation projects, provide two closely inter-related

types of basic services, of a technical-administrative nature known as "operations" and the "conservation or management" of projects. The former involves responsibilities for the distribution of irrigation waters between users, and the latter the maintenance or conservation of the pertinent infrastructure in optimum operating conditions. In most cases, these services are provided right from the source of the project's water supply to the very edge of the individual farm.

The success of agricultural activities in irrigation projects, depends largely on the efficiency of these services, an important component for the overall efficiency of a project, known as "distribution efficiency". Thus, agricultural production and productivity is seriously affected (especially in those areas completely under irrigation) if these services are deficient or irregular, and crops do not receive the volume of water needed for satisfactory growth and development—either when they should or in the amounts they need, during the vegetative cycle.

Unfortunately, the services to operate and maintain irrigation systems in many of our countries are seriously deficient in many aspects, such as: up-dated regulations for the distribution of irrigation waters, which contemplate soil characteristics, proper planting dates, vegetative cycles and irrigation requirements—as to magnitude and opportunity—for the different crops; service rates which do not allow for economic self-sufficiency nor encourage farmers to use water as efficiently as possible; the general lack of reliable measurement structures or instruments to ensure the accurate control and evaluation of irrigation waters; the untimely and careless labor on routine maintenance work to assure the functioning of irrigation infrastructures as close to original design specifications as possible; financing problems for the timely repair or replacement of infrastructures affected by floods or other unexpected events; the lack of coordination between the different institutions making use of a common source for different and frequently multiple use projects; and perhaps most important, the lack and low level of training of the personnel responsible for the basic services described above.

Worth stressing with respect to this last point, is the urgent need to start or increase activities oriented towards overcoming these limitations. Some work is already being done in Mexico, Brazil, Peru and Venezuela and their efforts are well worth emulating: they have created training centers for irrigation and related, areas of interest, and have made considerable progress on other aspects, to assure the improved management and development of their irrigation programs. It should be emphasized that training is one of the basic objectives of IICA's Program for the Conservation and Management of Land and Waters and is well justified in view of the urgent need for trained personnel to manage irrigation projects. The Program has been working in collaboration with the majority of our countries, on national and multinational-type actions, with the aim of up-grading the pertinent national agencies and those of the inter-American and world-wide systems.

These efforts are more than fully justified in view of the fact that the management of irrigation projects would not be possible without adequately trained personnel. Moreover, if not accomplished, the very policies and actions of a legal, technical and financial nature, with respect to irrigation, would become practically inoperable in many aspects, instead of being adapted to help overcome already identified constraints, amongst others.

A lack of National Plans to Regulate the Use of Hydraulic Resources

There is no question that the socio-economic development of our countries is closely linked to the integral and



The expansion of cultivated areas implies a study of the more efficient methods to distribute and make the most of water resources, for irrigation purposes. An agricultural engineer, above, indicates how to bury the pipes for underground irrigation.

optimum utilization of our material resources. Amongst these, is water which is essential for all biological processes and human activity; the excess, scarcity or irrational use of this resource, therefore, can be factors which limit the development process.

There is also a general awareness of the fact that the development, conservation and adequate use of natural resources, with respect to present and future populations, is irrevocably a State responsibility. This is even more evident when one considers how difficult it is for private or local action to ensure the harmonious compatibility of these processes, in any case of a complex nature, with the objectives and goals outlined in National Development Plans.

Another well-founded premise demonstrates that hydro planning at national levels is essential as an instrument to assure optimum utilization of hydro resources in a country, taking national, sectoral, or regional development objectives into due account, in the understanding that isolated action in this field *per se* is not enough, but forms a part of the general planning that should be undertaken by all societies.

Despite the above, however, it must be recognized that a large number of our countries do not have this valuable tool to assure an harmonious relationship with national integral development plans, and the rational utilization of hydro resources. This deficiency undoubtedly constrains increased agricultural production, under total or supplementary irrigation systems.

However, this does not mean that there is not an increasing awareness of the need for national hydro planning. This may be seen in the up-dating of legal regulations, the creation of new institutions, and basic interdisciplinary studies, which, together with other actions, are being undertaken by

our countries to assure their adoption, implementation and application. In these aspects, the progress achieved in Mexico, Venezuela and Peru, amongst several others, must be recognized.

In general terms, it may be stated, rather freely, that all hydro planning at national levels, includes two inter-related, complementary but main parts:

- the establishment of hydro planning, within the established policy of a country for its integral development, having designated principles, criteria and in-depth guidelines which identify the basic needs of the problem in question, clearly defining the objectives sought to solve them; and
- the definition of the most appropriate methodology bases, in relation to the geo-socio-economic context in question, to standardize the execution of inventories, diagnostic and other studies and inter-disciplinary activities to clearly define the supply-demand balance for water, maintaining a quantitative and qualitative equilibrium insofar as possible within time horizons set for medium and long term bases, at the level of hydrographic units to be defined, to implement hydro planning aspects.

Although, this cannot be discussed at greater length here, it is worth while emphasizing the following:

- a) The advantages of formulating national hydro planning, from a prior up-dating or complementing of legal provisions in water aspects, to the opportune creation or up-grading of a high-level agency to assume pertinent governing responsibilities;
- b) The advisability of our countries subscribing or putting into practice, mutual assistance and technical cooperation agreements so as to up-grade and up-date hydro plans. An outstanding example of this is the agreement between Peru and Venezuela, being sponsored by the OAS.

Participation of the Ministries of Agriculture in the study, design, construction and management of irrigation projects

As in the case of programs in other areas, the irrigation projects have a basic role to play in attaining the improved agricultural development levels sought.

Hence, it is felt that their study, design, construction and management should be a direct responsibility of the agricultural sector, something which is not true yet, in many of our countries, where other sectors such as Public Works or Interior are in charge of these aspects.

There are a number of reasons to justify the advisability of the programs or processes that concern us being a responsibility of the agricultural sector. It is a fact that they must indeed be based on the concepts, criteria and information provided us by the progress achieved in the different disciplines in agriculture, dealing with water-soil-plant relationships. Moreover, the agencies responsible for managing irrigation projects –veritable integral development units– are in an advantageous position to ensure the harmonious application and coordination of the different programs and actions of the sector.

In this respect, it must be recognized that there is a persistent and increasing awareness throughout Latin America, of the need to add to the responsibilities of the Ministries or

Secretariats of Agriculture, on such aspects as the study, design, construction and management of irrigation projects. Recent examples of this would be the creation of the Undersecretariat of Natural Renewable Resources and Ecology (May 1976) within the State Secretariat of Agriculture and Livestock of Argentina, with responsibilities in this field; and the fusion of the Secretariats of Agriculture and Hydraulic Resources of Mexico (January 1977) into one State Secretariat.

Lack of research in support of improving irrigated agriculture

It is well known that over the past several decades, there have been notable changes in irrigation concepts, mainly as a result of the work of a group of soils physicists who provided information about soil-water-plant relationships, together with the general technological progress being attained, since much research has been done throughout the world, particularly in developed countries, with the aim of contributing to the optimum utilization of agricultural resources in general, and particularly irrigated agriculture.

Of the different methodologies developed to this end, perhaps of outstanding interest are the mathematical formulas to determine, amongst other matters, crop water requirements, drainage needs and optimum fertilizer dosages using different measurable parameters. Many of these methods have been developed in areas and under conditions that are very different from those in Latin America, and hence the need to adapt them to our conditions. Some of the work that should be done as soon as possible in our countries include: studies on the opportunity and magnitude of the types of irrigation for different crops; methods of applying water; leaching and drainage qualities of soils; optimum water/crop yield relationships most suitable planting seasons; optimum fertilizer combinations; control of sediments and weeds, etc.

As mentioned previously, the greatest responsibility to program, coordinate and carry out these research studies, and to disseminate their results to farmers so as to assure their rapid adoption, belongs to the specialized services of the agricultural sector, backed by experimental and demonstration stations, pilot drainage centers and the active participation of universities and technical teams of the different organizations of our farmers.

Conclusion

Evidently, the suggestions presented in this chapter do not cover –either in depth or as to possibilities– the wide range of policies, measures and actions which some of our countries are already applying and which could be adopted or strengthened so as to assure that irrigated agriculture, together with dryland farming and a more rational utilization of our humid tropical regions, contribute as fast as possible to increases in agricultural production and productivity. Despite limitations noted, we are confident that the suggestions may be of use to foster a valuable exchange of ideas.

Little mention has been made of the advantages and limitations of agriculture under total or supplementary irrigation, as related to exclusively dryland farming. The omission is justified, since it is felt that decisions to support the improved development of one or another type of agriculture, will depend on the results of careful studies of the different geo-socio-economic realities of the countries, within the framework of their respective integral development plans.

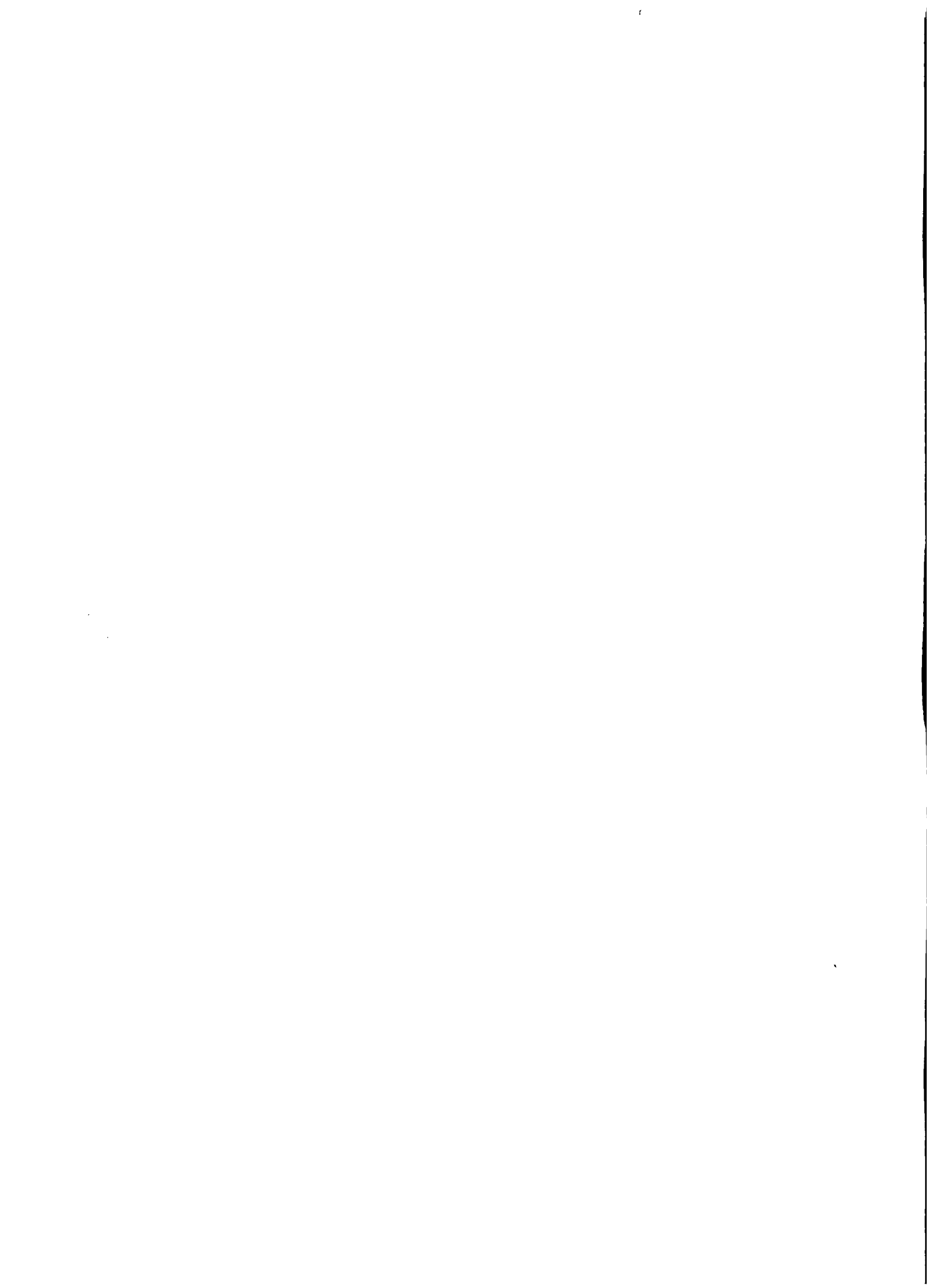
Worth stressing, however, is the fact that the objectives and goals approved by the Board of Directors of IICA for the Program on the Conservation and Management of Lands and



Inauguration of a course on the design and construction of drainage systems, in Argentina.

Waters, are closely identified with the problems being encountered on national irrigation projects. Hence, program specialists are available to the institutions of all the countries

of Latin America and the Caribbean responsible for the development of irrigation, for whatever technical cooperation that may be needed.



Chapter III.
IICA AND AGRICULTURAL INFORMATION
AND DOCUMENTATION



Chapter III

IICA AND AGRICULTURAL INFORMATION AND DOCUMENTATION

Introduction

There are serious limitations in the generation, flow and use of information and documentation for rural development purposes throughout the Hemisphere. This situation hinders the planning and implementation of the national development programs in Latin American and Caribbean countries and considerably limits the efficiency of technical and financial assistance services provided by international agencies.

To overcome these deficiencies, IICA develops programs oriented towards gathering, analyzing and disseminating available information in a systematic manner, promoting actions so national institutions organize their own national agricultural information sub-systems; carrying out studies, complementary analyses and activities so as to integrate the agricultural information of Latin America and the Caribbean into international information systems, such as AGRINTER; and producing information, at different levels and for different publics in the agricultural sector, to meet part of the needs of the Member State countries.

The magnitude of available information resources in each institution; the degree in which the objectives of each institution have been defined; the distribution of information services according to types of users; the degree in which institutions coordinate their information programs, and the mechanisms used for this purpose; are all part of the data analyzed on a priority basis.

The main objectives of these programs are: to emphasize work to strengthen national institutions responsible for generating, storing, processing and disseminating agricultural information; to support the organization and functioning of national information sub-systems and their implementation, through the creation of national documentation and information centers; to cooperate with national agencies on the promotion and establishment of mechanisms to stimulate and facilitate the use of this documentation; to support the integration of national sub-systems into an inter-American information system (AGRINTER); to produce material, and publish results from scientific meetings and conferences and high-level technical magazines as well as working documents, in response to member country needs.

Inter-American Agricultural Documentation and Information Centre

The Inter-American Agricultural and Information Centre is the main component of Line of Action I - Information and Documentation for Agricultural Development, with head offices in San José, Costa Rica, although actions are hemispheric in scope.

Of the more important actions worthy of mention, is the production of magnetic computer tapes containing documentary data on agricultural literature in Latin America and the Caribbean. This work has been possible thanks to support received from the International Development Research Centre (IDRC) of Canada.

These tapes serve as an information input means for the AGRINTER (hemispheric) and AGRIS (world) systems, and represent a significant achievement, creating the bases to collect data produced by the member states of IICA that may be retrieved with computers, in a regular or retrospective manner.

The first magnetic tapes with Latin American and Caribbean inputs for the AGRIS world system were produced in December 1976. At the same time, these inputs have been accumulated to be translated later, in automated fashion, into the Agricultural Index for Latin America and the Caribbean.

Worthy of mention is the fact that AGRINTER automatically processes all inputs in a unified manner, and thus, the input for AGRIS is only a sub-product of the total operation. Moreover, CIDIA, as Coordinator Center for AGRINTER, is now in a position to receive computer inputs from those countries already capable of producing it in this manner.

As of September 1977, AGRINTER will start producing magnetic tapes on a quarterly basis to be used in the automated retrieval of information, thus converting the "Agricultural Index for Latin America and the Caribbean" into a printed version of these tapes. In this first stage, the tapes include 1,200 bibliographic references per month, and each number of the Index offers, quarterly, an average of 3,500 bibliographic entries which saves technical and financial efforts, as well as assuring the rapid publication of the Index.

CIDIA has also continued its efforts in strengthening national agricultural information sub-systems, providing significant assistance through direct advisory services and specific courses on AGRINTER and AGRIS information systems methodology; the administration of said systems, etc. In addition, CIDIA continues with international courses for agricultural librarians and documentalists, as well as in-service training to up-date technical know-how.

It is evident that this approach at the information system level, is an appropriate IICA instrument to assist its member countries. Currently, IICA is collaborating with 17 countries of Latin America and the Caribbean, through actions that involve support, planning, implementation, human resources development, and the transfer of methodologies for



The assured and increased diffusion of information about the agricultural sector will permit the institutions in member countries to have reliable indicators so as to project and predict policies directed towards rural development. In the picture, Dr. José Emilio G. Araujo, Director General of IICA, presents the document "IICA Contributions to Agricultural Science: Literature", an important Institute contribution.

the standardization and inter-connection of information systems.

It is interesting to note that the planning, filming and text of the documentary regarding AGRINTER operations have been finished. The final version of the film is being edited so as to have a concrete, audiovisual presentation of the system.

The film introduces and explains AGRINTER - pointing out the participative nature of this enterprise of the Latin American and Caribbean countries- for information users in general and specifically, national officials responsible for planning and decision-making at high policy levels.

The film is being sponsored by IICA and the International Development Research Centre (IDRC) of Canada, through its Regional Office in Bogota, Colombia. It is approximately 15 minutes long, and should be finished by the end of 1977.

Agricultural Information Program for the Central American Isthmus (PIADIC)

This important institutional program is being carried out through an agreement with the regional Office for Central America and Panama (ROCAP) and has concentrated its efforts, during the period that covers this report, on the development of information analyses, as well as on identifying the agencies in the countries of the area, interested in receiving the required in-service-training for the analysis, collection and distribution of information in priority areas, as selected by PIADIC.

An outstanding PIADIC action has been the integration of National Committees in the area and their later coordina-

tion with the International Regional Advisory Committee, an important means for determining strategies and priorities, selecting areas of work and recommending regional policies, according to the needs of the Regional Agricultural Information System.

The Regional Committee is composed of representatives of the Central American Economic Integration Bank (BCIE); the Tropical Agricultural Research and Training Center (CATIE), the Central American Secretariat of Economic Integration (SIECA), IICA, the Central American Secretariat of Public Administration (ICAP), the Nutrition Institute of Central America and Panama (INCAP), the Regional International Quarantine Agency (OIRSA), the Central American Industrial Research and Technology Institute (ICAITI) etc.

Public Information Office

An important part of the information work is devoted to the production and dissemination of institutional information as well as scientific and technical information for researchers, educators, technicians and students in Latin America and the Caribbean.

IICA has been producing this type of technical assistance for a long time, not only with the aim of providing information needed by higher governing bodies such as the Board of Directors, but also so as to reach a wider public, to explain what is being done by IICA, how and why.

Thus, the Publication Information Office was created, with a group of institutional technicians devoted to editing, preparing, outlining, organizing, producing and distributing scientific, technical, divulgative and institutional information for the various publics of IICA, specialized agency of the Inter-American System.

This unit is in charge of publishing the two IICA magazines, *Turrialba* and *Rural Development in the Americas*, as well as the series of Teaching Texts and Materials. During this period, more than six books have been published, which have been "best sellers" in the member countries.

Amongst these books is "Administration Manual on Agricultural Enterprises", by Guillermo Guerra of Colombia. This book was reprinted twice in less than a year - 2000 copies each time. A second edition of the book "Introduction to Phytopathology", by Dr. Carlos Luis González, Costa Rica, is completely sold out. Similarly, the first edition of the book "Rural Credit" by Mr. Jaime Vélez of Colombia, was almost sold out before leaving the printers. This series has had the support of the Kellogg Foundation through a grant of US\$ 200,000, and is now in its third year of operation.

Also worthy of mention, due to the obvious emergencies resulting from the coffee rust disease in Nicaragua, is the fact that IICA has reprinted two new editions of the "Coffee Rust Bibliography", and an interesting publication entitled "IICA's contribution to Coffee Rust Information". Thus, four Miscellaneous Publications of immediate interest to the Central American countries, were made rapidly available to these countries and others in South America and the Antilles, thanks to the efforts of the Graphic Arts and Print Shop Unit of the Public Information Office, which printed over a hundred thousand copies of the different types of publications, during the period being reported.

IICA's actions in the member countries

Just over 17 percent of the Operative-Program for this Line of Action was devoted to the countries of the Northern Zone (Central America, Mexico and Panama), with three main



Inauguration of the First National Agricultural Documentation and Information Meeting, in La Paz, Bolivia.

programs: PIADIC; rural development analysis; and documentation, publications and dissemination.

A basic version of the Action Plan for each country, with up-to-date information on the institutional and rural development process, has been developed as part of the institutional and rural analysis program. The documentation, publication and dissemination program has assured a greater coverage of IICA activities, establishing solid links with the mass communications media in the area. Moreover, the goals of the PIADIC multinational project were accomplished, establishing and consolidating regional advisory and coordination committees; diagnostic studies were up-dated and the national agricultural information plans have been designed for each country.

Most progress was made in the following areas:

- a. Use of sampling frames for collecting agricultural information;
- b. Planning the establishment of data banks;
- c. Design of studies on information needs regarding marketing and crop predictions, to up-grade the quality of this information;
- d. Establishment of theoretical bases for the elaboration of agricultural information technological packages; and
- e. Upgrading the presentation of agricultural research results.

Worthy of mention, as an example of the work in the Andean Zone (Bolivia, Ecuador, Colombia, Peru and Venezuela) are the following achievements in the coordination, integration and transfer of information, attaining program objectives through actions to strengthen national information systems, and agricultural documentation and information services.

This has been accomplished by means of advisory services, and analyses and restructuring of documentation services and information systems; compilation and diffusion of specialized bibliographies; in-service training for librarian, documentation and information personnel, through courses on modern concepts for the administration of information systems and services.

A greater participation of Colombia in the AGRINTER system has been achieved as a result of the course given by IICA in Bogota, in 1976, on AGRINTER methodology, as well as the integration of bibliographic agricultural information and its diffusion through the Agricultural Index of Latin America and the Caribbean (LAALC) published by CIDIA, contributing thereby to a compilation of a National Agricultural Bibliography.

With the aim of making the best use of the economic, human and documentary resources for the benefit of agricultural information users, IICA sponsored a course on the Administration of Agricultural Information Systems in Bogotá in 1977; the executive personnel from 24 libraries and documentation centers of the agricultural sector in Bolivia, Colombia and Venezuela attended.



The Director General of IICA, with professors and participants of the XX International Course on Agricultural Documentation.

The agricultural system was restructured in Colombia, during the 1976-77 period, as a result of IICA's action, and with the support of National Information Systems and the collaboration of sectoral agricultural agencies.

In the countries of the Antilles Zone, the program for the diagnostic study or analysis of the agricultural sector is proving its potential to provide a solid basis for the planning of future agricultural activities. For example, in Guyana, a priority is to provide a reliable statistical basis on agricultural production. Hence the importance of a thorough diagnostic study.

It has also been possible to prepare the Country-level Action Plan for Haiti, based on a diagnostic study of this institutional program, even though some problems related to statistical information were encountered.

In Jamaica a study of the present agricultural situation was carried out, and published in September 1976, and a first approximation of the country-level action plan has been prepared.

Actions towards the creation and strengthening of the national agricultural information sub-system are underway in the Dominican Republic.

In the Southern Zone countries (Brazil, Argentina, Chile, Paraguay and Uruguay) an example of institutional action is the experience in Argentina, where government opinion regarding sectoral diagnostic studies is contributing to changes in running the economy and is generating consultations on planning mechanisms, requesting IICA cooperation to incorporate them into regular national objectives. Considerable importance is being given to the National Information Systems on Agricultural Sciences (SNICA), as well as to elements of documentary communication and statistic information.

SNICA is facing definitive consolidation, and should be restructured shortly; IICA will contribute to this action.

In Chile the diagnostic study of the sectorial situation was up-dated, allowing for the reformulation of IICA's action plan, and work on the documentation and agricultural information sub-system, as related to AGRINTER, was continued.

In Paraguay studies of the agricultural agencies of the country were carried out and support was provided the national agricultural and forestry information and documentation sub-system. In Brazil (Rio de Janeiro, Viçosa and Brasilia) support was given to the libraries of postgraduate agricultural education agencies, and in Uruguay IICA helped the Alberto Boerger Research Center on studies for an agricultural information sub-system.

Chapter IV.
IICA AND
AGRICULTURAL EDUCATION



Chapter IV

IICA AND AGRICULTURAL EDUCATION

Introduction

IICA Member States have made a tremendous effort over the past fifteen years, to attain a quantitative expansion and qualitative improvement of their educational services, at all levels.

Despite these efforts, however, the gap between rural and urban education still exists, for a number of reasons. This may be appreciated from the view point of population coverage, as well as the quality of educational schemes and their adjustment to the specific conditions and needs of the rural sector in general, and more particularly the agricultural sector.

Although significant in terms of resources involved, the efforts described above, have unfortunately almost invariably been undertaken within structural and organizational schemes which have problems and lack adjustment to a greater or lesser degree, in at least the following areas:

- a. The institutional models for education in the sector are implicitly based on organizational patterns directed towards responding to specific characteristics of an urban population, such as student attendance possibilities, the academic organization of groups, the qualifications of the teaching staff, etc.
- b. There is no explicit definition of the supply of education, in operational terms. Hence, it is difficult to appreciate the insertion of sectoral education products into the labor market.
- c. For similar reasons, the content of educational curricula provided, tends to be pre-defined as per models which are not valid for the milieu in which they are used.
- d. The different levels in which the educational systems are organized are poorly defined and poorly inter-related; there are serious obstacles to moving from one level to another, and what the student has achieved at the end of each level, is not very clear.
- e. The agencies responsible for the different aspects of education are frequently located in different institutional systems, with little inter-communication and coordination.
- f. Although resources for educational – particularly agricultural education – are substantial in comparison with the total public expenditure, it would seem that they are inadequate to meet the needs resulting from a growing demand for educational services.

From the above, therefore, it is evident why IICA's objectives in the field of education for rural development, are:

- a. To back-stop national efforts on the analysis and strengthening of institutional variables within the educational system, fostering the utilization of methodologies oriented towards up-grading the analysis of the cultural, educational and occupational situation in the agricultural sector; fostering inter-institutional coordination between agencies working in rural education, with the aim of up-grading their efficiency; and fostering the establishment and consolidation of regional or multinational mechanisms with the aim of exchanging experiences and knowledge, to encourage a spirit of collaboration, the utilization of common resources and others.
- b. To foster interest in building up the rural sectoral educational system components, identified as the essential agencies to ensure the attainment of educational objectives established in connection with the agricultural development plans of the Member States.

To this end, IICA has two basic programs within Line of Action II, Education for Rural Development: a) The Organization and Planning of Educational Systems; and b) Strengthening Specific Educational Sub-systems. A little over 9 percent of the total amount of Institute resources were allocated to these programs, during the fiscal period being covered by this report.

Some examples of the work being done in the different countries, grouped by Zone, are presented below.

IICA Action in the Andean Zone

Two main projects on the organization and planning of educational systems were carried out in the Andean Zone, one in Ecuador and the other in Peru. In Ecuador, effective work was accomplished on the organization of a Planning Unit at the Faculty of Agricultural Engineering and Veterinary Medicine of the Central University. This project is programmed for a five year period, in support of the organization and planning of an Agricultural Education Sub-system in Ecuador. Based on the progress achieved in one year, it has been decided to continue providing support to the Planning Unit of this Faculty, so as to ensure its adequate projection and to up-grade the teaching staff.

In Peru, work was continued on the systematization of adequate field work methodologies for non-academic types of education, opening up tremendous possibilities for defining actions for zonal education; work will be continued on the first stage of this program.



Ing. Enrique Jovel, Dean of the Faculty of Agricultural Sciences, El Salvador, inaugurating the First Meeting of the Regional Association of Higher Agricultural Education Institutions of Central America, sponsored by IICA.

Considerable support has been provided on the reformation of educational services in rural areas, through the Basic Work and Education Qualification Office, of the Ministry of Education. During this first year of work, progress was achieved on the exchange of information and the systematization of a series of working experiments; on compiling complementary information for a diagnostic study of education in rural areas; a strategy was defined for future actions.

In Higher Agricultural Education sub-systems, IICA has been working towards establishing a solid University Planning Office at the National Universities of La Molina, (Lima), Técnico del Altiplano (Puno), San Antonio Abad (Cuzco), de la Amazonía (Iquitos) and Técnica (Piura). IICA action has concentrated on university organization and management, planning, academic organization, educational techniques, evaluation systems, expanding coursework into socio-economic areas, educational management and intra and inter-institutional coordination aspects.

In Venezuela, IICA has been working with professors from different Faculties and Schools of Agronomy and Veterinary Sciences, particularly the National Experimental University of the Western Plains "Ezequiel Zamora" (UNELLEZ), and the Faculty of Veterinary Sciences at the Central University of Venezuela (UCV), on structuring study programs, revising curricula and selecting different training methodologies.

Together with AVIEAS (Association of Higher Agricultural Education Institutions), IICA worked on establishing

coordination requirements at the teaching level, so as to guarantee interdisciplinary and complementary aspects in the different academic fields. Several working meetings were held with this in mind: one for university professors on teaching chemistry for agricultural sciences, with the aim of assuring an even finer adjustment of the basic concepts in this discipline in line with agricultural careers, and another for a group of professors specialized in animal production, so as to establish a strategy linking university and graduate plans in this field of study. Work shops were also given on aspects pertaining to the planning, development and evaluation of curricula.

The courses in Rural Development, Soil Sciences, Animal Production, Experimental Design and Statistics at the postgraduate level were supported. Guidance workshops were continued for research professors in agricultural sciences, so as to establish research priorities utilizing the same methodologies used for this purpose by the National Agricultural Research Fund (FONAIAP) and the national experiment stations. Basic documents have also been drawn up, establishing uniform procedures on how to get research projects underway, as well as other aspects of their implementation.

A system has been proposed which attempts to attain the coordinated participation of an increased number of persons on the formulation and maintenance of a coherent policy to handle research problems by means of project review mechanisms at the different levels. Worthy of note is the Latin American Seminar which was organized on Postgraduate Rural Development Programs.



Mr. Mario Paes de Barros, Director of the IICA Office in Bolivia, addresses participants at the inaugural session on the Fifth Meeting of the Bolivian Association of Higher Agricultural Education Institutions (ABIEAS), in La Paz, Bolivia.

IICA's efforts to reinforce the agricultural education sub-systems, within the frame of reference of its Indicative Plan, and of Plan V of the Nation, coincide on supporting the transformation of rural education in Venezuela, in general terms, into a more effective development instrument, and on establishing a continuous reflection and critical process of higher agricultural education and a mechanism to assure permanent adjustments in the operational phase of the agencies, in line with rural development needs.

It is expected that by 1978 there will be an increase in the number of professionals trained at a post graduate level in agricultural sciences and, as a result, the training of research professors who can contribute to increasing the efficiency, effectiveness and functionability of sectoral agencies with the aim of increasing production and productivity, the capacity to generate employment in the rural sector and to reduce marginal aspects of the sector.

In Colombia, IICA has been strengthening the Colombian Institute to Foster Higher Education (ICFES), providing support on the creation of a Higher Agricultural Education Planning Department. Research, consultancy and organizational-type activities were also undertaken with the aim of forming various interdisciplinary groups capable of preparing, using and evaluating educational material. The Colombian Institute for Agrarian Reform (INCORA) requested and obtained IICA's help on designing a national training plan.

The National Agricultural Training Program (PNCA) which IICA conducts in collaboration with the government of

Colombia, continues with its work in the fields of education research, marketing and administrative up-grading. A total of 573 persons were trained in twenty-eight courses, most of them given in Bogota. It should be stressed that the Course on the Preparation and Evaluation of Agricultural Projects (PEPA) had 29 students (IICA/IDB Agreement); three development projects were prepared in this course and were presented, for possible use by three of the agencies of the national agricultural sector.

IICA Action in the Antilles Zone

Perhaps the most outstanding example of the work in this field within this Zone, is the project providing support on the organization and planning of a rural educational system in Haiti.

The feasibility study for an integral education project was completed in September 1976, and the pertinent loan request was submitted to IDB by the Government of Haiti. IICA provided all the technical data that the IDB Mission (February 1977) requested, and the loan has since been approved. IICA technical cooperation on this project, will therefore get underway at the beginning of the next fiscal period.

In Guyana, cooperation for the University is being planned, now that it has accepted the idea of establishing a Faculty of Agronomy, where IICA specialists will best be able to contribute.



The Director General of IICA addressing the First Regional Andean Seminar on Higher Agricultural Education, in Lima Peru. With him are the Rector of the Agrarian University of Peru, Dr. Federico Anavitarte, and several IICA staff members.

Considerable work within this Line of Action has also been done in the area of non-formal education, by means of projects to strengthen the agricultural extension agencies in Jamaica and Guyana, mainly in methodological and training aspects.

IICA Action in the Northern Zone

In Mexico, IICA has concentrated specifically on higher education (university level and postgraduate) and on agricultural extension, with the following main actions:

- Support has been provided on establishing linkages between universities and the rural community, as well as on national development plans.
- Advisory services have been provided on preparing basic documents to get an institutional self-study underway.
- Help has been provided on institutional development aspects of the higher agricultural education schools, based on a diagnosis derived from the self-study.
- Help has been given on the training of human resources for agricultural education and research purposes, at regional and national levels.
- Professors and students of the schools of higher agricultural education have attended seminars, encounters and working meetings for training purposes - 120 in the first case and 100 in the latter two, have been trained.

- Help was provided on the preparation and formulation of a National Training Program for extension personnel. Work on these aspects was begun with the planning and implementation of Stage I of the Training Cycle for State Information Agents.
- Advisory services have been provided on planning the use of mass media forms of communication to back-stop state information programs.

In the countries of Central America, the situation at present, is as follows:

- a. The Agreement with the University of Costa Rica is coming to an end, having attained all objectives. Work is still being done on strengthening the Agricultural Training and Extension Office of the Ministry of Agriculture and Animal Husbandry.
- b. In El Salvador, considerable work was done in training: 8 national courses were given, mainly for extensionists and researchers; a total of 315 persons took these courses which included training in the areas of communications, extension methodologies and supervision.
- c. In Honduras, help was provided on getting the Technical Assistance Agreement for the National Agricultural School underway, with World Bank resources. Advisory services were also provided the Regional University Center for the Atlantic Coast (CURLA) on the elaboration of an integral development project. The National Agricultural School was also analysed, by academic levels.

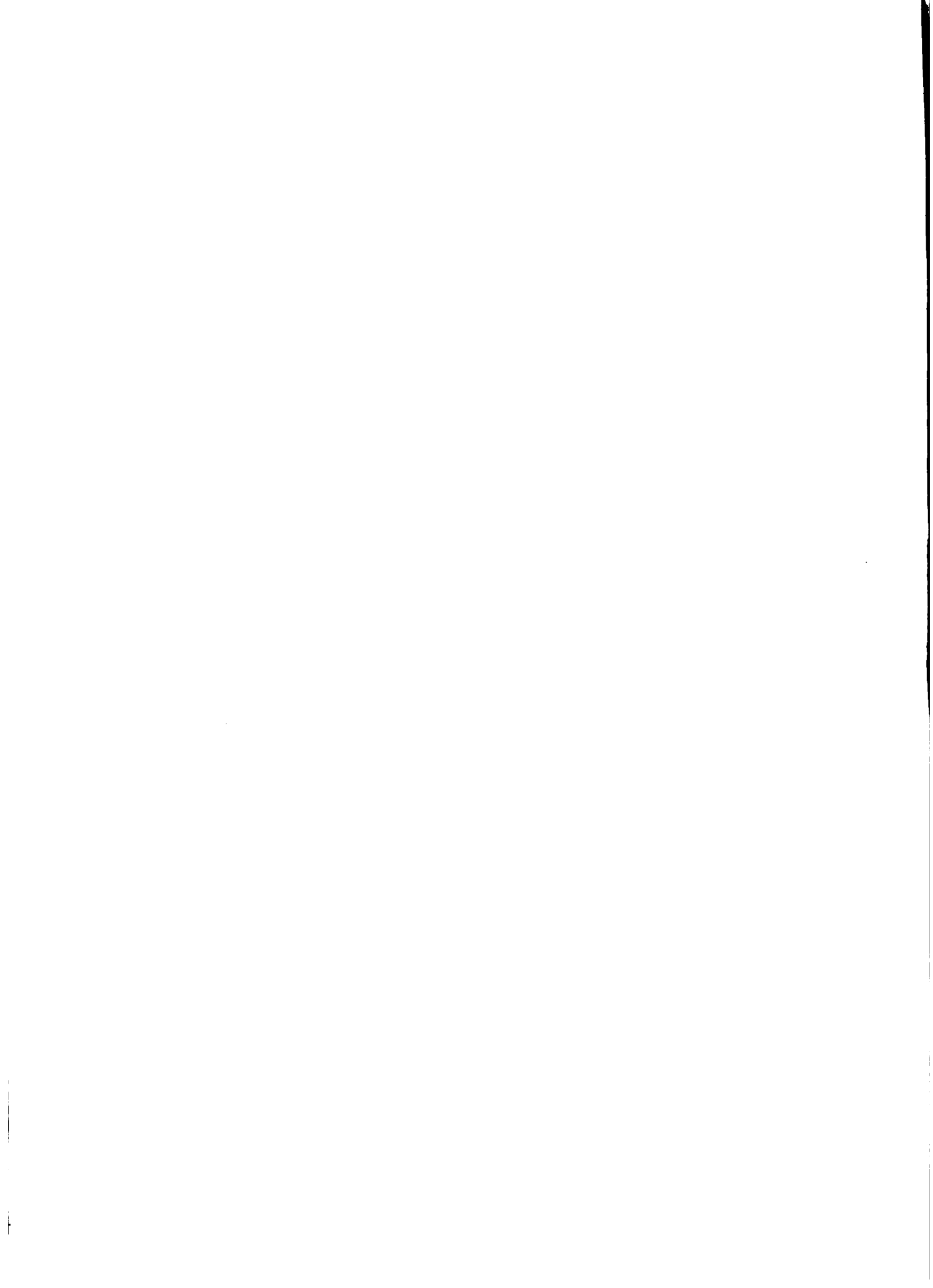
- d. IICA action in Guatemala is being oriented towards back-stopping the Technical Cooperation Project to implement the National Human Resources Program, where a serious need for help has been detected, in order to meet Agricultural Development Plan requirements.
- e. In Panama, IICA has been working mainly on a project to strengthen agricultural education, in general.

IICA Action in the Southern Zone

There is renewed concern in different types of activities in postgraduate education in Argentina, and SEAG has indicated interest in having IICA's assistance once more. In Chile, work was started on the gradual transfer of the organization and functioning of the Permanent Graduate Program. In addition, activities with the Permanent Agricultural Sciences and Forestry Committee of the Council of Rectors (CAF) were continued, and have been extended so as to include activities in middle-level agricultural education. A meeting of Southern

Cone specialists was held, with this aim in mind. In Paraguay, IICA has been working on middle-level technical education aspects, with the Agricultural and Forestry Office of the Ministry of Agriculture, and on the preparation of an Agricultural Education Project, which has been submitted by the Ministry to IDB for due consideration. In Brazil, work was continued on reenforcing the agricultural engineering course at the Federal University of Pelotas, and support was provided the Brazilian Association of Higher Agricultural Education on the reformulation of agricultural sciences curricula. In addition, an integral document was prepared, with recommendations for the Agricultural Sciences Education Committee (CECA). More specifically, work was also undertaken in institution building at the Faculty of Veterinary Medicine of the Federal University of Pelotas, and considerable work was accomplished in providing advisory services to higher agricultural education institutions on the application of a systems approach to education and research.

In Uruguay, IICA worked mainly on up-grading the teaching capability of professors, and on fostering the establishment of a teaching support unit at the University.



Chapter V.
IICA AND
AGRICULTURAL RESEARCH



Chapter V

IICA AND AGRICULTURAL RESEARCH

Introduction

An essential component of all national economic and social development plans, particularly rural development plans, is the contribution of a national applied research and technology transfer program, in line with national objectives and resources, and directly related to existing rural problems and the basic research underway in each country or at the advanced centers in more developed nations.

The countries of Latin America and the Caribbean have made considerable progress and have worked hard over the past 20 years, to establish and improve their national agricultural research systems. At present, all the countries recognize the need to increase their efforts in this line, and to augment the benefits resulting from applied agricultural research as an integral part of national economic and social development plans and national technology transfer programs.

Although the applied agricultural research services in a number of countries have obtained valuable results which have made it possible to prepare technological packages or production systems similar to those used in the so-called "green revolution", most countries have not been able to accomplish this much. Unfortunately, results from applied research have seldom had the expected results due, mainly, to the inadequate production programs underway, with respect to ready availability of resources and credit; and existing price, marketing, technical assistance and extension policies.

However, new possibilities for more intensive work to up-grade agricultural research in developing countries have been created over the past few years, due to interest in fostering international support for agricultural research purposes. Moreover, the countries are acknowledging their need for and potential benefits of concentrated efforts in the fields of agricultural research and the transfer of technology, in line with their national economic and social development objectives.

IICA's policy to cooperate with countries on strengthening their national research and technology transfer institutions is in line with this recent recognition of national needs and priorities. IICA is therefore working on two extensive programs, one on "Strengthening the national agricultural research and technology transfer agencies", and the other on the "Regional coordination of agricultural research".

The following are amongst the main objectives of these two programs:

a. To maintain permanently up-dated inventories and diagnostic studies of the national agricultural research and technology transfer systems.

- b. To foster the development of socio-economic research work, as applied and integrated with physical and biological research efforts, with the aim of improving the economic and social evaluation of agricultural research and technology transfer results, and the consequences of their application to rural development programs, particularly with respect to rural employment.
- c. To promote and cooperate on the development of production systems and appropriate technological packages to meet regional and socio-economic needs, and on the development of effective means to transfer and utilize technology in priority sectors, in accordance with rural development programs, particularly those being implemented by small farmers.
- d. To encourage, support and cooperate on the organization of regional advisory, coordination and action committees, comprised of high-level directives of the national agricultural research systems.
- e. To foster the establishment of permanent regional-level mechanisms to help coordinate national and complementary international technical cooperation and financial efforts.
- f. To improve the present information systems with respect to results obtained from completed agricultural research projects and their scope of applicability, as well as to the results from current and future research projects, and available and future human and material resources.

IICA actions oriented towards attaining these objectives, during the period of this report, are as follows:

IICA Action in the Andean Zone

In Bolivia, IICA and the Ministry of Farming Affairs and Agriculture (MACA) signed an institutional support agreement to integrate agricultural research and extension endeavors and prepare a national agricultural research and extension project. The agreement was for six months, and involved the formulation of an adequate institutional mechanism to assure the integration of agricultural research and extension activities, indicating the means to mobilize and obtain permanent funding for a financial study of the institutional mechanism to be involved, and to elaborate a development project which may serve as the basis to implement this mechanism, as approved by the government, so as to up-grade experiment stations, extension agencies and other MACA dependencies. The Bolivian Institute of Agricultural Technology (IBTA) has been created as a direct result of these actions, and IICA has continued to cooperate on internal strengthening aspects as well as on its research programs.



Research: key to attaining improvements.

In Colombia, IICA Has been working on a study of production systems in the traditional sector with the aim of cooperating with research agencies, such as the Colombian Agricultural Institute and the Universities, on determining objectives that are more in line with existing national realities.

In Ecuador, IICA has been working on strengthening the National Agricultural Research Institute (INIAP), through the provision of advisory services on the analysis and planning of a national research program in coffee, which is the country's second export crop, after bananas. These services include assistance in aspects pertaining to the prevention of coffee rust and on production system programs.

In Peru, the regional research program was finally established, upon approval by OSPAL of the document entitled "Request for Technical Assistance on the Creation of an Institutional Research and Technology Transfer Mechanism, within the Food Sector", with possibilities of financing through IDB. At the regional level, IICA has been supporting the Regional Agricultural Research Centers (CRIA III-jungle, and IV-south), which need most help, on the transfer of technology and on institutional organization and management aspects.

In Venezuela, the National Agricultural Research Fund (FONAIAP) created its Planning Office, in 1975, as part of its Technical Management service. At present this office has six full time professionals at the national level, and three part time technicians at a regional level. IICA has been providing this office with advisory services on the progressive instrumentalization of their planning system, and has participated on the design, formulation and evaluation of mechanisms for preparing budget programs, technical information, presentation and approval of new programs, etc., as well as on the definition of priorities at national, regional and product levels.

IICA Action in the Antilles Zone

In the new office in Guyana, IICA has found that a priority need in the field of agricultural research is to define the appropriate technological package for each ecological zone of the country. This will have to be done as help from experts in this field can be obtained on a full time basis in this country.

In Haiti, the Coffee Institute has prepared a Five-year Plan to rehabilitate the coffee producing areas of the country. IICA cooperated with Haiti on this plan, to be financed by USAID for a sum of 4.5 million dollars.

IICA's agricultural research work in Jamaica is closely linked with that of the Simon Bolivar Fund project, and will therefore be reported in fuller detail, in a special chapter on the Fund.

IICA has continued to work on strengthening the agricultural research agencies in the Dominican Republic, through its Regional Office, which is responsible for this project.

IICA Action in the Northern Zone

In Costa Rica, considerable work has gone into the field of small farmer production systems, both in agriculture and animal husbandry, as well as in the development of forest species for lumber. Most of this work has been done at the Tropical Agricultural Research and Training Center (CATIE), in Turrialba, and is reported on in detail towards the end of this chapter.

In El Salvador, IICA has been working on training researchers from the National Agricultural Technology Center (CENTA), at the express behest of the Minister of Agriculture and the Director General of CENTA. Eleven technicians have travelled abroad to receive specialized in-service training at institutions in other countries.

In Honduras, IICA cooperated with the Agricultural Operations Head Office of the Natural Resources Secretariat, on the preparation of a research and extension development project. An agreement on technical assistance in research, the transfer of technology, and the production, certification and multiplication of seed is currently being processed. The purpose of the agreement will be to provide technical assistance in those areas that are contemplated in the Credit Agreement between the Central Bank of Honduras and the International Promotion Association of the World Bank Group.

In Guatemala, IICA has been helping on the preparation of a Technological Guide for farming promoters, together with the Agricultural Science and Technology Institute (ICTA). In addition, courses on statistics and experimental design were given for 34 ICTA technicians and there has been work on creating coordination mechanisms between ICTA and DIGESA, for technology transfer purposes.

In Mexico, IICA's work in this Line of Action is relatively little since the country has its own National Agricultural Research Institute (INIA) which does not need much in the way of help. However, there is some thought to back-stop the National Cassava Plan, in cooperation with INIA.

In Nicaragua, IICA has been supporting the National Agricultural Technology Institute (INTA) on the design and development of a basic mechanism to encourage the production of science and technology in that country.

In Panama, IICA has been working mostly with the Agricultural Research Institute (IDIAP).

IICA Action in the Southern Zone

In Argentina, IICA has been working mainly on supporting aspects related to the organization and administration of agricultural research. IICA may also be working with the sub-system to generate and disseminate technology, within a frame of reference of entrepreneurial returns and efficient management regulations and scientific quality, currently being sought throughout the country.

In Chile, various socio-economic studies were carried out in the Diguá and Quillota districts together with local professionals, within the frame of reference of a national economic and social analysis of existing technological research in the country.

In Paraguay, a study of research undertaken on priority products was carried out for the Agricultural Research and Extension Office, on individual national product programs, such as soy beans, cotton, corn, wheat, rice and tobacco.

In Brazil, IICA has done some important work in this field, mainly through an agreement with the Brazilian Agricultural Research Institute (EMBRAPA). More detailed information on this is given in the chapter on special programs. IICA has also been working closely with the Executive Committee for the Recuperation of Cacao (CEPLAC), by providing advisory services to the Research Center (CEPEC) on the planning and administration of research on cacao and other tropical crops.

Considerable work was done in Uruguay on the organization and development of agricultural research, together with the Ministry of Agriculture. Of importance were aspects pertaining to the development of production systems, and the seminars held on the transfer of technology, as well as advisory and training services provided on the production of information material for dissemination purposes.

Tropical Agricultural Research and Training Center (CATIE)

Research has definitely been one of the priority objectives at CATIE, since its very inception. Some of the principal aspects of the work carried out at this center, an associate program of the Institute during the period of this report, are summarized below, by field of work.

1. Department of Forest Sciences

A somewhat different conceptual frame of reference was structured for this Department, particularly as regards research, with work concentrated in three main lines: silviculture for commercial lumber; the management of wild (natural) areas and watersheds; and stable agro-forestry systems for small farms; and two minor lines: forest protection and the forest products laboratory.

The working program was discussed in detail with high-level directives of the forestry sector in the six countries of the Central American Isthmus that met in Turrialba in September 1976, with the aim of more clearly defining the forestry programs for the Central American region with future projections.

a. Natural secondary forests

In Central America, the area in secondary forests is continuously increasing. In addition to producing timber of interest, management is somewhat easier than in primary forests.



Dr. Abdul Wahab, IICA expert in Jamaica, points out the flame/potato production system being tested, which produces yields of over 13 tons a hectare within four months of planting.

Several phenology studies were continued with the aim of establishing better bases for work to be done to foster regeneration and to make the most of tree growth during the different phases of development of secondary successions.

b. Plantations of rapid growth species

Eucalyptus deglupta – A species for humid tropical zones which produces buttress poles in 11 months and posts in less than three years.

Gmelina arborea – Extraordinary volume up to eight years, but has growth formation problems, to be solved by means of a clonal program which is getting underway, and promises to be of considerable value, since vegetative propagation is very successful with this species.

Pinus caribaea – The establishment of a million dollar industry in the zone of Turrialba, based on introductions by CATIE, and in cooperation with hundreds of small farmers; it could serve as a model for other Central American countries.

A program has been started to select top quality trees, with periodic measurements to permit a sure prediction of yields, even during thinning stages. A volume of over 40 cubic meters per hectare per year, under bark, at eight years of age, is calculated.

c. Watershed and wild-land management

A research study was concluded on land management in two watersheds, one on the Pacific side (monzonic climate) and the other on the Atlantic (year-round rainfall) in Costa Rica. The potential use was compared, on the basis of studies which included slope angle, soil conditions and types of vegeta-

tion; it was possible to map under-utilized, properly used and over-used areas.

In wild-land aspects, research implied the provision of support on national programs on the management of national parks and reserves in Panama (Darién: approximately 2,000 km²), Costa Rica (Corcovado, Osa Peninsula: 350 km²), and Honduras (The Mosquitia biosphere reserve: 1,000 km²).

A project involving the selection of seven small biological reserves on private property in Costa Rica, and their proper management (a civil association) is about to be concluded.

d. Agro-forestry systems

Considerable progress was made on programming this new line, which encompasses the areas of specialization of the three departments at CATIE.

A conceptual framework for a world-wide program was prepared at the behest of the International Development Research Centre of Canada, with suggestions for more promising lines of work, such as the *taungya* system; living fences; a third layer of *Cordia alliodora* over coffee and cacao (the second being a low shade layer of *Erythrina* spp and *Inga* spp.); trees that will up-grade forage in high altitude dairy farming; trees in low altitudes which produce forage (leaves and branches) or improve the soil; tree curtains alternating with pastures or crops, and the transformation of lumber into animal feed.

Research has been started on some of these aspects, taking advantage of existing empirical data in the Central American countries which can be quantified:

– it was found that the “laurel” tree (*Cordia alliodora*) grown in association with cacao, coffee and pastures, produces annual increases of from 11 to 22.4 m³ of lumber per hectare a year, thereby permitting an increase in economic returns; it is thought that it may also imply beneficial effects on the management of soils.

– it was possible to demonstrate that *Eucalyptus deglupta* grown with corn, reduced the cost of establishing a plantation of these trees by 60%, as compared to plots without corn. The system is easily transferable to other Central American countries.

A study of 35 species used as living fences was started, noting propagation methods, possible use of leaves, flowers, fruits, resins and timber (for more posts, firewood, charcoal, buttress poles, etc), and the pruning systems. There is a surprising amount of information albeit of an empirical nature, in the Central American countries; this technique is unanimously accepted, throughout.

e. Forest protection

The most notable aspect of this work was the design of a system to regulate the use of controlled fires as a useful instrument to up-grade management aspects in natural pine stands. At the request of local authorities, research was undertaken in Honduras (Siguatepeque), Nicaragua (northeast) and on 3,000 hectares of *Pinus caribaea* plantations in “La Yeguada” (Panama).

f. Forest products laboratory

The laboratory is located at the Faculty of Engineering on the University of Costa Rica campus, and is supervised by CATIE in a joint program with the Ministry of Agriculture and Animal Husbandry, and the University.

Some of the more important work carried out during the year, was as follows:

– a study of the physical and mechanical properties of the pejibaye (*Guilielma utilis*) was initiated. This is a palm used for fruit and the heart of the palm and a more integral utilization of this species could contribute significantly to farmer income in Costa Rica and Panama.

– the physical and mechanical properties of bamboo (*Bambusa utilis*) and *Eucalyptus deglupta* were studied, to serve as buttress poles in banana stands. The former, which is most commonly used, takes three years before it can be cropped; the latter, of recent introduction, can be cut under a year of age. Preliminary studies indicate that the adaptability of eucalyptus is excellent.

– the possibility of using thinned trees from cypress plantations (*Cupressus lusitanica*) for telephone posts was studied, with promising initial results. An income of this nature within a few years, would reduce the problem of immobilized capital which is tied up in forest plantations.

– progress is being made on the production of low cost, light-mix concretes, using a wood-cement mixture. The raw material is obtained from wood industry leavings, is of good quality and low cost, and the resulting product can be used to build low cost housing.

2. Department of Tropical Crops and Soils

Research and training activities in this department have been stepped up this past year, in new areas of Central America and because of the number of new projects starting up. Most of the work has been concentrated on developing adequate technologies for specific crop ecologies and conditions, keeping the socio-economic characteristics of small farmers in mind.

a. Small farmer cropping systems

Central Experiment – Data from the third year of a study of 48 cropping systems indicate that, in general, the systems with beans or corn produce the greatest amount of total protein, and those with corn and cassava, produce more total energy. In general terms, multiple cropping produces more food than monocropping systems, with either high or low levels of technology. The following systems were those which produced the largest net income of all the systems tested, much as in the previous years: sweet potato followed by sweet potato; cassava and beans together followed by maize and sweet corn; cassava and sweet potato (at the beginning and the end of the cycle); and beans plus maize, together, followed by maize.

Satellite experiments: – When the effect of production of the type of plant used and the distance between rows in a maize plus bean association were studied, it was found that the type of bean plant in either single or paired rows, did not affect corn production. Bean plants of a given type and of the climbing variety, produced more in single rows alternating with corn, than in single row planting of the one crop.

Complementary experiments: – Several experiments were carried out which provided information on the influence of dominant crops on the micro-climatic conditions in associated crops. In general, the dominant crops (corn, cassava and plantains) interfere significantly with the effect of solar radiation, when they attain their full height and leaf spread. There is more external solar energy in the first cropping cycle (November-March) than in the second (May-October). Corn interfered earlier with the light than cassava or plantain during

the first cycle, but the three crops interfered significantly during the second cycle; as a result, the production of common and coast bean (*Vigna*) was less in the second cycle. The coast bean yielded more than the common bean in all systems, particularly in the second cycle.

When the dissemination of the main coast bean diseases were studied in two seasons (dry and rainy), it was found that the CPMV virus attacked the monocrop more than the associations. During the dry season, there were no difference in *Ascochyta* attacks, but *Erysiphe* attacked later in both seasons.

Potato experiments in Turrialba were seriously affected by a number of pests and diseases; outstanding amongst these are *P. infestans*, *Erwinia carotovora* and *Pseudomonas solanacearum*, which was the most serious. When a study was made of the virulence and source of *Pseudomonas*, it was found that there was a high incidence of infection in all the soils and therefore it was suggested that studies should be carried out on the survival mechanisms of the bacteria and the rotation systems, in low tropical zones.

Nearly all herbicides tested controlled the weeds adequately, in a selectivity test on beans, of several herbicides applied either individually or in combinations.

b. Outreach to the Central American countries

In Honduras, Costa Rica and Nicaragua, areas were selected for the Cropping Systems Project, and surveys were carried out to identify the cropping systems being used by farmers, factors limiting production and the socio-economic structure. This information served as a basis for the design of cropping system experiments carried out in each place, on land owned or worked by small farmers. Some of the initial results of this work are given below.

Several experiments were carried out in Yojoa and Guaymas, Honduras; although no significant advantage was found in the corn and bean production systems, grown separately or together. However, it was noted that there was some advantage in the associated system, since it reduced the risk of total loss. A new system including coast beans in the corn-rice association rotations was introduced. It was found that the corn-squash system in rotation with only squash, produced higher gross income.

In Costa Rica, tests were conducted in Palmares, San Rafael de Platanares (Perez Zeledon), San Isidro del General, Guapiles and Guayabo. Throughout, it was found that the yield of coast bean CENTA 105 was higher than any common bean. When three levels of technology were tested in corn plus beans systems, it was found that the intermediate cost level of technology produced more than the farmer's or high technology levels. In Guapiles, eight alternate ways to prepare the soil were tested, on lands invaded by *Panicum maximum* and *Paspalum fasciculatum*. Where treatments included the application of Glyphosate, sprouting with traditional plowing preparation was faster and provided yields that were several times higher than in the traditional practice of ploughing the beans under. When a survey was taken of the physical, economic, administrative and social aspects associated with levels of technology in coffee and corn, it was discovered that farmers using higher levels of technology are using some type of registration of activities, expenditures and income; have been at school for a longer period of time; keep in touch with information media; and have available labor.

In Nicaragua, tests were carried out in the areas of Samulalí and Estanzuela. The more profitable utilization of fertilizers with corn and beans was studied, but there was no clear response in the case of corn. In an experiment with

different levels of technology with corn and beans in association, it was found that fertilization together with pest control significantly increased production of both crops and raised net and family incomes. A hillside farming system of beans and sorghum was studied and was compared with the monoculture of these crops. It was found that two rows of sorghum alternating with six rows of beans produced the highest net and family income returns.

c. Soil fertility program

This program has continued to back-stop the work carried out in the soils analysis laboratories of the Ministries of Agriculture in Nicaragua, Honduras and Costa Rica, and at CENTA, El Salvador and ICTA in Guatemala.

The new soil fertility laboratory at CATIE serves as a quality control and calibration laboratory for the countries of the area, with a daily analytical capacity of two hundred samples. There is a reverse osmosis apparatus (the first in Central America) and an atomic absorption machine, amongst other laboratory equipment.

The laboratory complements its activities with field work, and analyzes soils samples from the experimental areas of the Systems Project. Levels of fertility are determined, and recommendations are made as to the optimum fertilizer formulas to be used.

The soil fertility program has diagnosed the levels of soil fertility in extensive areas as well as on individual farms. As a result it is now possible to make recommendations as to the most adequate formulas to be used for each geographic area and type of soil, where the Cropping Systems program is being carried out.

d. Genetic resources program

The main purpose of this program is to preserve autochthonous genetic resources of the Meso-American region and the Caribbean, in a properly documented manner, and to foster the exchange of germplasm with other genetic resource centers and to conduct studies on seed conservation methodologies.

CATIE has made its established coffee, cacao, fruit trees and pulses collections available to the program, plus space and facilities to set up new collections.

The main work undertaken during this first year, was to renew the living collections, particularly of fruit trees and coffee; the latter is perhaps, the largest existing collection in the world. Efforts have also been made to establish collections of the Cucurbitaceae (gourd family), pulses and fruit trees in some specific areas of Central America, such as in the highlands, the Pacific slopes of Costa Rica, the southwest of Guatemala and the Atlantic coast of Honduras.

e. Cacao program

Research results in plant breeding have proved the validity of 25 hybrids which are being distributed to Central American and Caribbean programs; 10 new hybrids have been added.

CATIE produced 1.5 million improved seeds this year, for programs fostering cacao production. These were distributed to the six countries of the Central American Isthmus. The hybrid seed production gardens have been increased in size, by 6 hectares: 3 in Turrialba and 3 at the La Lola farm.



Dr. Robert Parks, President of Iowa State University, USA, and Dr. José Emilio G. Araujo, sign an agreement to join forces in the field of technology transfer for small farmers.

f. Coffee program

The study of hybrid progeny, with coffee rust resistant parents, was continued. Approximately 1,000 kg of seed from coffee rust resistant varieties (progeny of introductions and hybrids) were sent to Panama and six other countries.

3. Tropical Animal Husbandry Department

Research in animal production has concentrated on the development of technologies for milk and beef production to be used by the small and medium-sized farmer. Research activities this year were directed towards incorporating previous research results into production systems, and producing more information about the different components of the systems.

a. Milk production

A milk production system was established at CATIE with the aim of integrating the knowledge made available through previous departmental research work, on feeding, health, genetics and management.

The aim of the system is to demonstrate that milk can be produced economically on small areas using intensive production systems, and that this technology can be adopted by the small farmer. The CATIE milk production system consists in exploiting 3.5 hectares of Star grass (*Cynodon nlemfuensis*) with a grazing pressure of 5 animals per hectare. Results obtained to date indicate that a small farmer, with Star pastures fertilized with 250 kg. of nitrogen per hectare, and a

pasture rotation rate of 21 days rest and one day grazing, can produce 15,000 kg of milk per hectare per year, with an approximate 60 percent return on an economically feasible unit.

These results from the CATIE system indicate that the efficient utilization of the resource pasture, is the basis of the system.

The department has continued to carry out research on the management and utilization of Star grass and other potential grass species. Emphasis is being given to the use of fertilizers, with the objective of studying optimum types and quantities, so as to further reduce the cost of producing forage.

The use of agroindustrial by-products as an energy supplement for milk production based on pastures needs further study. Culled bananas are being used to supplement grazing, and results to date indicate that 0.3 kg of banana dry matter per 100 kg of animal live weight a day, can produce nearly optimum response in milk production. This response to a by-product with high starch content would indicate that tropical grasses do not have easily digestible carbohydrates and that the provision of small amounts of these by-products supplies a high concentration of easily digestible carbohydrates, thereby contributing to increased milk production in grazing cattle.

Another aspect of the research program being emphasized is the utilization of agricultural crop chaff or waste matter. This research work is being supported by IDRC-Canada. The bean chaff (of *Phaseolus vulgaris*) is being studied as an ingredient of a feeding system ration, for small farmer use.



Pine and eucalyptus tree posts, produced at CATIE, in Turrialba – an important contribution of the center's work, towards establishing lumber industries.

Consumption tests indicate that the animal can consume between 2.6 and 3.0 kg bean ration dry matter per 100 kg live weight a day, when molasses-urea is added at levels varying between 1.9 and 19.2 percent. Similar work is being conducted with corn waste matter, and sweet potato leaves and stems.

b. Beef production

So as to be able to efficiently develop appropriate technologies for the area, it is first necessary to be able to predict what the problem is, with a reasonable degree of accuracy. Thus, the following activities have been undertaken with the aim of: i) integrating and evaluating – in a quantitative manner – the information on predictions resulting from CATIE research over the past several years, and on what is available in the literature; ii) detecting the areas in which further information is still needed, other than on an intuitive basis; iii) developing the means to predict cattle production under grazing conditions. So as to comply with these objectives, it was decided to study over 200 models, taking the following factors into account which affect production: pasture availability – quantity and quality; nutritional history of the animal; rainfall; molasses supplementation; and the selection made by the grazing animal of quality forage.

With respect to the first objective, it has been possible to infer the following: in the tropics, pasture quality is the main factor which hinders a grazing animal from making the most of his innate potential growth. This potential is higher than a rate of 1 kg a day. Molasses and urea are a substitute for grass when the latter is scarce, and can serve as a supplement when pasture is low quality. In this manner, moderate growth weight of between 0.3 and 0.4 kg a day can be

obtained. However, these supplements should not be used with good quality pasture as it serves to reduce animal yield. The former nutritional deficit affects the caloric value of the weight gain. Therefore, to be able to predict animal behavior with precision, after a dry season, it is essential to first know its behavior during the dry or wanting season.

The areas which deserve further study and priority attention, with respect to the second objective, are: the efficiency in utilizing molasses at intermediate levels of animal metabolism; energy expended due to the physical activity of the animal; the parameters for evaluating the nutritional status of the animal; and the effect of the latter, on later behavior.

In relation to the third objective, the model selected offers a determination coefficient (R^2) of 0.74 which is quite acceptable if one considers that the study includes various grass species and cattle breeds in both Pacific and Atlantic ecological conditions, in Costa Rica and Panama. Moreover, the numerical coefficients provide notable stability. Consequently, grazing cattle requirement tables have been prepared, on the basis of: i) molasses and urea requirements to obtain required weight gain, with a knowledge of pasture availability, *in vitro* digestibility, animal weight, and previous growth rate; ii) pasture availability and digestibility requirements to obtain required weight gain, with a knowledge of previous animal weight and growth rate. These are the first tables of available requirements for grazing animals, under the ecological conditions of the tropics.

Similarly, the feed component of agroindustrial leavings for beef production is also being studied. Poultry excrement has been characterized quantitatively and qualitatively, as a

source of protein in beef production. The evaluation of the metabolic economy of nitrogen in poultry excrement (table birds) indicates that the retention of protein decreases in a linear manner, as the level of excrement is raised, a typical behavior of a non-proteic nitrogen source such as urea. Thus, the use of excrement is justified if it replaces a high cost protein in the ration. The weight gain response with different levels of poultry excrement and banana culls as a means to increase the efficient utilization of non-proteic nitrogen, would indicate that with increases in nitrogen retention as a result of the banana added, the animal's weight gain is also greater.

Cooperation with other regional and international agencies

IICA continues to work closely with the regional and international agencies working in agricultural research. A Cooperative Agreement was signed this year, for instance, with the

International Tropical Agriculture Center (CIAT) in Colombia, to get a series of rural development programs underway.

A similar situation exists with the International Potato Center (CIP) in Peru, and conversations are being held with the same purpose in mind, with high-level officers of the International Plant Breeding Center for Corn and Wheat (CIMMYT) in Mexico.

IICA also has several operating agreements and joint projects underway with the International Development Research Centre of Canada, through its office in Bogota, and with several North American Universities such as Iowa State, with a program of "continuing seminars" on the transfer of technology in Central America. Cooperative agreements have also been entered upon with the University of Cornell and with Michigan State University, in December 1976.

Chapter VI.
IICA AND
FOSTERING AGRICULTURAL PRODUCTION



Chapter VI

IICA AND FOSTERING AGRICULTURAL PRODUCTION

Introduction

This chapter reports on the programs oriented towards increasing agricultural production in the member countries, by means of actions directed towards the incorporation of new areas; the conservation and management of land and waters; fostering the production of basic foods; agricultural marketing; animal production; cooperation on preventing and eradicating coffee rust diseases; credit assistance; silvicultural development; and the reduction of post-harvest losses.

Information on actions undertaken in the field of multinational integration is also included. This chapter therefore covers two of IICA's Lines of Action.

A growing population with higher aspirations for increased nutritional levels and general well-being, brings strong pressures to bear on the production of food, raw material and export products. When the national production of basic foods does not satisfy the demand, governments are obliged to increase the volume of their imports or leave a large proportion of the population living at inadequate nutritional levels. Thus, during the 1971-1974 period, the countries of Latin America and the Caribbean were obliged to import food in amounts equivalent to 13 percent of the total production for the area at that time, expressed in daily per capita calory requirements.

Most of the member countries are making every effort to increase their production of basic foods and other products, including agricultural and forestry products for export purposes. However, they have run into a number of technical, economic, social, organizational and other difficulties. In addition to the need to find the most adequate technological packages and production systems, there are difficulties in providing inputs and public support services. So far, a flexible and effective technical and credit assistance system does not exist and the state organizational structure has still to be adjusted to meet the needs of small farmers which produce the basic foods in many of our countries.

IICA has therefore designed a set of projects and actions with the aim of helping the countries to overcome these difficulties, by back-stopping national efforts to increase the production of basic foods and export products and by providing technical cooperation on the formulation and implementation of national actions, involving the coordinated effort of several agencies working in aspects pertaining to increasing production and productivity. National efforts directed towards the small farmer are being emphasized.

IICA Action in the Andean Zone

In Bolivia, IICA has been working on a project to strengthen the agricultural promotion units of development corporations, particularly in the areas of Beni, Cochabamba, Santa Cruz, Tarija and Chuquisaca. Moreover, in-service training has been provided for several Bolivian technicians on food technology aspects and an agricultural marketing program was designed and initiated for CORDEPAZ.

In Colombia, IICA support on the colonization sub-system was concentrated on an INCORA program to analyze the Caquetá No. 1 Project and on various aspects of the IICA-Tropics program. Work was also undertaken in marketing and credit aspects; the sub-system to foster animal production was also back-stopped in more traditional areas.

In Ecuador, IICA has been working on strengthening the key agencies of the agricultural marketing sub-system. A methodologies document was prepared for the analysis and formulation of marketing policies for specific agricultural products. If this is approved by the Government, it will be a step towards the establishment of a national marketing policy. IICA also worked closely with the "Campesino" Organization and Training Office, with the aim of orienting its actions towards associative types of marketing.

In Peru, IICA has continued providing support on the formulation and implementation of an integral marketing system. Basic material on marketing aspects and on marketing research methodologies and procedures have been published, and are being used in the training of technical personnel working in Food Zones who will be implementing the marketing system at the "campesino" base level.

Support to the Forestry Office has been continued, on aspects pertaining to personnel training and the programming of forestry research. Special attention is being given the problem of forest plantations. Training activities were undertaken with the aim of providing technicians in the Agrarian Zones with knowledge on aspects pertaining to the planning and preparation of forestry plantation projects, and on the technological, political and economic aspects of forest production.

The Waters Office of Peru requested IICA's help to formulate a policy for the reorganization of the irrigation districts throughout the country. This work is being carried out within the Program for the Conservation and Management of Land and Waters.

Within the marketing strategy for rural development purposes, emphasis has been given this year, in Venezuela, to aspects pertaining to the organization of farmers on marketing



A working luncheon for participants at the Workshop-course on Potato Marketing, held in San José de Ocoa, in the Dominican Republic.

their products. In this manner, the former somewhat isolated projects on storage centers have been integrated into a national program which is comprised of an integral development plan by stages, and contemplates the inclusion of state, regional and private projects; on a medium-term basis this plan aspires to become a National Horticultural Marketing Board, wherein the organization of producers and their participation in the management and administration of these centers, will be along common guidelines. To ensure the efficient implementation of this marketing strategy, two essential services were created within the Agricultural Marketing Corporation (CMA): the Marketing Promotion Service and the Marketing Information Service, in the one case to assure markets for products from farmer organizations and in the other, an adequate and timely indication of market opportunities to facilitate the efficient planning of crops and to help maximize farmer incomes. IICA support and initiative has been provided at all stages.

IICA continues to be concerned about training and inter-institutional coordination aspects. The bases for the eventual creation of a regular training program on agricultural marketing organizations were established this past year, and it is expected that the program will be consolidated within the next year.

IICA Action in the Antilles Zone

One of the more important actions undertaken in Guyana is related to the legumes production project. As this project is financed by the Simon Bolivar Fund, it will be reported in greater detail in the chapter on this Fund.

In Haiti, IICA worked intensively on the national improved seed project. The Government feels that the frame of reference prepared for this project can serve as a suitable model for other agencies that present similar projects. There has been renewed interest and thrust on the agricultural marketing project since April 1977, with direct assistance from technicians located at IICA headquarters in San José.

In Jamaica, as in Guyana, the main work has involved aspects pertaining to hillside conservation of soils and crops, a project financed by the Simon Bolivar Fund, and which is reported elsewhere.

Although Barbados did not yet have an IICA Office established during the period covered by this report, the Institute has provided help on the preparation and implementation of soil conservation and management projects.

In the Dominican Republic, IICA has been concentrating on agricultural marketing aspects, with considerable progress noted at the national level. The Institute has collaborated on a diagnostic study of the agricultural marketing system, organized training courses and seminars in this field, has provided advisory services on strengthening the system of compiling and disseminating marketing information, and has fostered the creation of a planning unit within INESPRES. Also of importance was the collaboration provided the State Secretariat of Agriculture and INESPRES on preparing a rural marketing services project.



Ing. Agustín Merea, Head of the Land and Water Conservation and Management Program, with participants at the Third National Course on the Systematization of Irrigation Lands, in Viedma, Rio Negro, Argentina.

IICA Action in the Northern Zone

Perhaps amongst the more important actions of IICA in cooperation with the Government of Costa Rica on the preliminary studies and establishment of the Tempisque River Basin Integral Development Project is the work towards attaining national objectives of self-sufficiency in basic grains; strengthening the institutional marketing sub-system; and on the coffee pests and diseases programs.

IICA did a considerable amount of research on the programs for the integral development of the Tempisque river basin, particularly with respect to preparing the Research, Training and Final Irrigation Design Program at the Enrique Jiménez Núñez Experiment Station.

In El Salvador, the two most important activities included fostering the production of basic grains and cooperating with the Salvadoranean Coffee Research Institute (ISIC) on increasing crop productivity. The fact that 315 technicians were trained in the basic grains project is worthy of mention.

Moreover, since the coffee rust disease has appeared in Nicaragua, IICA has been changing the orientation of the help being given the ISIC project, by training personnel from the institution in sampling for and detecting this disease, and by distributing a considerable amount of informative material about coffee rust and the coffee borer.

In Honduras, IICA has been working mainly on back-stopping those agencies involved with irrigated agriculture; on

strengthening the marketing and credit institutions; and on cooperating with the Honduran Coffee Institute (INCAFE). Technical support was also provided the Natural Resources Secretariat on holding the VII Pan-American Seed Seminar and on the creation of a marketing agency. Moreover, 75 functionaries of the public sector attended a Seminar on the Preparation of Agricultural Development Projects (PEPA Courses).

In Guatemala, IICA has been working on strengthening the institutional sub-system to foster the production of basic foods and has cooperated with the coffee agencies in fostering productivity on small and medium-sized coffee plantations. Two DIGESA technicians were trained in drip irrigation aspects in Mexico, and advisory services were provided the agencies responsible for the national campaign against coffee rust.

In Mexico, two important projects were undertaken within this Line of Action: marketing and residual toxicity of pesticides. Other, unprogrammed activities were also carried out within the new project on reducing post-harvest losses. Throughout, emphasis was given to back-stopping the Trade Secretariat's efforts to organize its Rural Marketing and Marketing Systems Offices. Advisory services and assistance were provided on the elaboration of training programs for Trade Secretariat personnel and on the efforts to train and organize the citrus growers of the Chac Plan (Yucatán), within the Regional Development Plan.

With respect to personnel training in Plant Health aspects, it may be stated that established goals have been met, and Mexico now has the technological capability and the



Technical assistance and facilities which national institutions provide, will encourage the "campesino" to increase production. Above, national and IICA technicians discuss the yields of a specific cassava variety with a "campesino".

technically trained personnel needed in this field, as well as a Manual on Quality Control.

IICA's main work in Nicaragua has been oriented towards helping the government to design a campaign to eradicate the coffee rust disease. Technical assistance has been received from Brazilian and Colombian agencies for this purpose; a system has been designed and several publications have been printed for researchers and phytosanitary personnel.

In Panama, IICA's main work has been on strengthening the agency responsible for the conservation and management of land and water. In addition, and partly as a complement to the above, IICA has been collaborating with the Ministry of Agricultural Development (MIDA) on the formulation of projects to regulate the use of national natural resources, and on the preparation of an integral rural development project for the Tonosí valley.

IICA Action in the Southern Zone

Within the program for the management of land and water, IICA has some important work underway in Argentina, including giving a course on the design and operation of water reserves in cooperation with the Waters and Electric Energy Enterprise, one of a number of high-level courses on specific irrigation aspects which had been programmed for the fiscal year. Another course on the design and construction of drainage systems, also sponsored by the Waters and Electric Energy Enterprise, was given to 30 professionals from the different national institutions with responsibilities in this field.

IICA also co-sponsored an International Meeting with INTA (National Agricultural Technology Institute) on Animal Husbandry Studies, and their Application to the Agricultural

Development Process. Over 70 specialists from Argentina, Chile, Paraguay and Uruguay attended the meeting to discuss various topics illustrative of the evolution and present status of economic analysis programs in the field of animal husbandry.

IICA technicians travelled through the provinces of Jujuy, Salta and Tucumán at the invitation of local authorities to analyze possibilities for cooperation during the last stage of some irrigation works and the introduction of crops to the zone opened up by the Las Maderas dike. This project contemplated a wide range of basic works, of which a number have already been completed. The technicians discussed the relative aspects of making the most of the water reserves in the irrigation distribution zone of approximately 400,000 hectares in Jujuy, with the pertinent local authorities.

IICA has continued to cooperate with the government on back-stopping the prices and marketing programs of the State Secretariat of Agriculture and Livestock.

In Brazil, a successful marketing and land and waters management program was completed. The Cooperative Program to Train Human Resources in Irrigated Agriculture is described, to illustrate IICA's activities within this Line of Action.

As a regional development agency, SUDENE is fostering the expansion of irrigated agriculture in the northeast area of the country, and is coordinating the actions of other agencies working there, such as the National Department of Drought Prevention Works (DNOCS) and the San Francisco River Valley Development Company (CODEVASF). A key element to this expansion is to increase the number and up-grade the human resources working on these projects and on the implementation of irrigation districts. Hence SUDENE's request for IICA's assistance in designing a broad training program, of a cooperative nature, involving the coordinated efforts of SUDENE itself, DNOCS, CODEVASF, EMBRATER, EMBRAPA and the universities in the region, on four projects:

- a. The establishment of training teams in the agencies working in irrigated agriculture.
- b. Continuous training on the preparation, analysis and evaluation of irrigated agriculture projects.
- c. The training of teams to implement and operate irrigated areas.
- d. Continuous training of the technical personnel from those institutions back-stopping the irrigated agriculture endeavors.

Four IICA specialists are working full time on this program, which has a budget of 29 million cruzeiros, and will last approximately three years. By way of example, the Sertanejo project, in the Recife area should have 60 irrigated perimeters or areas established by 1980, with an action radius of 30 km each. Each of these perimeter cores will be working with 50 technicians of various levels of training and types of specialization. IICA has one full time technician on this project.

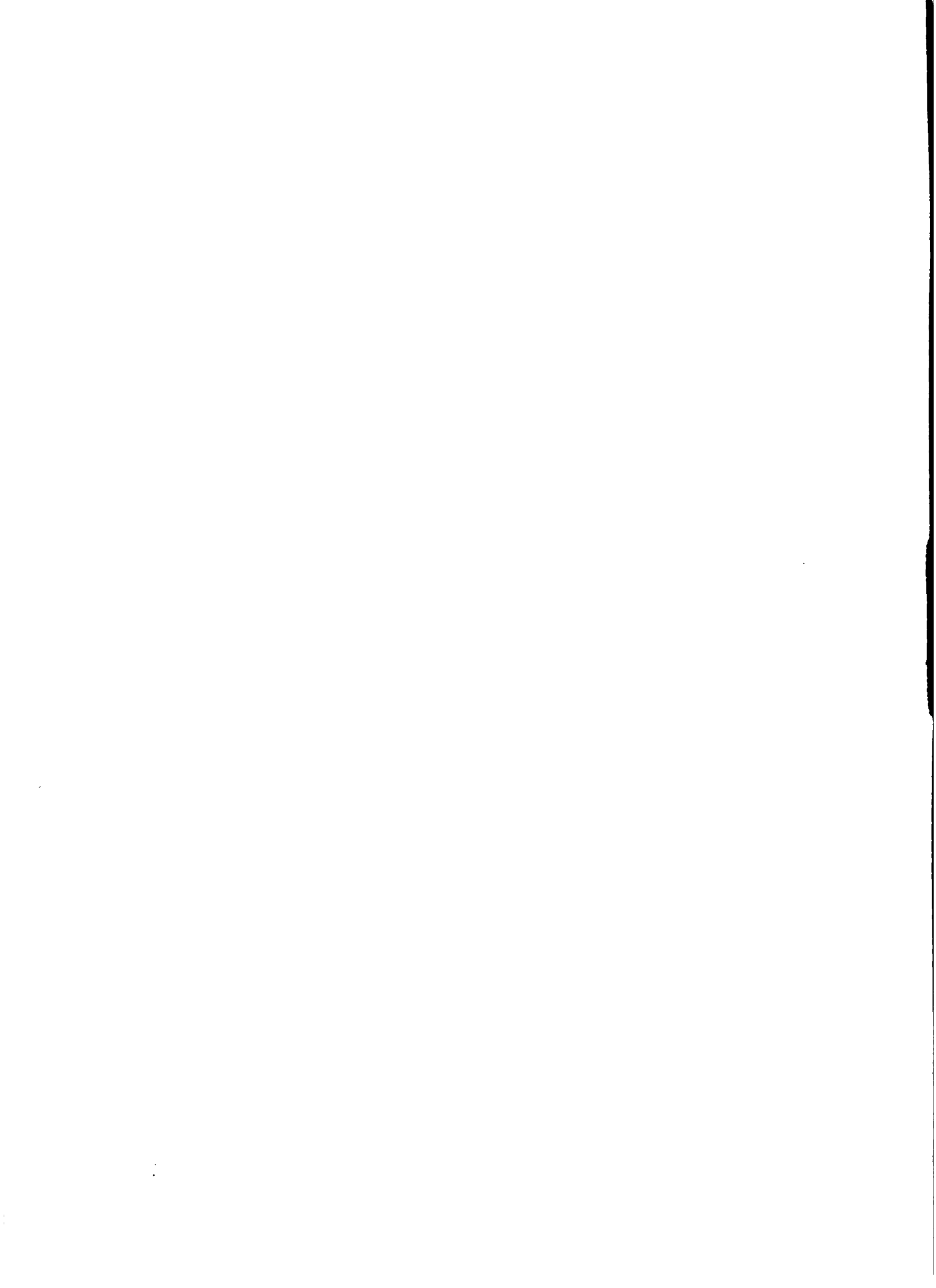
Four projects within this Line of Action were carried out in Chile: one supporting the strengthening of the bodies governing irrigation policies in the country; one on the expansion of the technical-administrative organization of the Pilot Conservation and Management of Land and Water District, so as to include the area of the Maule River basin; one concerning the reinforcement of the body governing policies pertaining to the conservation of natural renewable resources; and lastly, the expansion and improvement of irrigation aspects in Chile, a Simon Bolivar Fund project.

As in other years, IICA worked in Paraguay on aspects pertaining to the strengthening of marketing agencies, emphasizing the marketing situation of small farmers, with the aim of creating the necessary mechanisms to foster their socio-economic up-grading.

In Uruguay, IICA worked with the National Colonization Institute on the establishment of pilot projects for the conservation and management of soils; on the publication of agricultural production technical coefficients; and on the

socio-economic and institutional study of a priority geographic zone. Lastly, IICA has been working with the Economic Agriculture Research Office, on perfecting marketing information mechanisms.

With respect to Line of Action V, IICA has been working in Central America in cooperation with SIECA, in the Andean Zone with the Cartagena Agreement, and in the Southern Zone on the provision of advisory and training services on programming production units.



Chapter VII.
IICA AND
STRUCTURAL CHANGE



Chapter VII

IICA AND STRUCTURAL CHANGE

Introduction

There are a number of problems as a consequence of the concentration of productive resources in the agricultural sector of Latin America and the Caribbean, which influence the economic and social development, State institutional apparatus, and other aspects. The concentration of land in the hands of only a few, also results in a rather asymmetrical distribution of income.

In any case, the above-described situation resulted in the adoption of agrarian reform programs as of the 60's, to try and correct it. In fact, a total of 17 countries adopted agrarian reform legislation between 1961 and 1970. However, these laws and programs were never put into practice, for two main reasons: the scarcity of human and budgetary resources available to the agencies in charge of applying agrarian reform and the implicit legal difficulties in the very working of the laws that had been passed.

Hence, the co-existence of the "latifundio", in symbiotic relationship with the "minifundio", results in a broad range of economic and social anomalies. The one-way-street relationships with international markets, mercantile systems and investment flow from extra-continental countries; with the marketing and transportation of primary products, the supply of equipment and consumer goods, and with financing have a direct, negative influence on production and productivity, and on distribution and participation aspects.

The consolidation of the agrarian reform process already initiated in some of the countries is essential, to attain a flowing articulation between the different stages of sectoral and national planning, with the aim of assuring a technical rationale in solving these problems. It must be recognized that one of the problems derived from the concentration of land in Latin America, is the lack of instruments to develop "campesino" potential, as expressed through economic, political, cultural or group organizations.

This lack becomes obvious when attempts are made to link agrarian reform actions with "campesino" organization. There are no continental-level studies to illustrate, with figures, the number of possible beneficiaries of the agrarian reform process, or to compare this number with the number of beneficiaries grouped into organizations. Moreover, the very "campesino" organizations themselves confuse their objectives with those of urban syndicates which is directed towards obtaining material benefits; this hinders the work oriented toward encouraging the more professional aspects of "campesino" organization.

In addition, the organization of "campesinos" so as to increase production, is frequently approached with timidity;

the relative social advantages are often totally unknown. The massive incorporation of the "campesinos" into associative forms would permit them to develop proper enterprises, solving problems of social cohesion and identification while contributing to increased agricultural production and productivity. This would also help solve the problem of "campesino" participation in an efficient manner. The adoption of massive means of education and training, would be the key to solving this problem.

IICA has three basic programs in this Line of Action: a) agrarian reform; b) "campesino" organization; and c) training and studies on "campesino" community enterprises. There are 26 projects underway within these programs, in the different member countries.

IICA Action in the Andean Zone

In support of agrarian reform actions, IICA has been working in Colombia to test methodologies for studying "campesino" enterprises, so as to provide INCORA with the necessary instruments to help detect and anticipate problems that may appear in the "campesino" enterprises, and their causes.

In Ecuador, all programmed activities to strengthen the agrarian reform sub-system, were accomplished, in close working relationship with IERAC. A workshop was held on the formulation and application of area planning methodologies, and several practical ideas were discussed, which IERAC could test, as possible solutions to this particular problem; several possibilities for dealing with the problem of minifundio concentration and the development of programs with associative enterprises were also presented and discussed.

In Peru, IICA worked mainly on strengthening CENCIRA, through training programs for "campesino" enterprises, and the formulation of pertinent methodologies, particularly with respect to on-the-job training on projects and activities with the universities in business administration aspects. IICA also collaborated with CENCIRA on the formulation and implementation of several projects, such as the generation of employment possibilities in rural areas (GEAR), as a complement to the agrarian reform process, within a CENCIRA/IDB/Agricultural Bank agreement.

As per the IICA/IAN agreement in Venezuela, IICA has been providing the National Agrarian Institute with advisory services on the establishment of an agrarian reform planning system, and the pertinent document was duly prepared.

IICA also assisted on the preparation of the Annual Operative Plan, defining social and economic goals, resources,



General Luis Arbulú, Minister of Agriculture for Peru, receives the document entitled " Guidelines for the Identification of Investment Projects in Associative 'Campesino' Enterprises", from Ministry of Agriculture and IICA technicians.

policies and strategies for 1978, with a five year future projection.

IICA also cooperated with IAN on the preparation of a long-term agrarian reform plan; this was submitted to the pertinent authorities for them to decide on the final version of the text.

IICA's cadastral specialist provided continuous advisory services to the department responsible for appraising the lands, on the cadastral surveys of agrarian reform lands; and on improvements on owned or rented lands, for eventual expropriation purposes.

An Operative Manual was prepared, on the Identification of Landed Properties and Interviews which was duly approved at an internal seminar; and a Manual on Technical Reports regulating the steps to be followed in obtaining and presenting the information contained in a report.

IICA also strongly supported the program to up-grade lands, through the formulation of a methodology to set a price for lands to be improved - at the municipal level- and cooperation was also provided on establishing a technical-administrative procedure to facilitate attaining the goals outlined in the improvement program.

Support has also been provided on training the technicians in charge of fostering and advising "campesino" enterprises, from both the National Agrarian Institute and the Agricultural Development Office of the Ministry of Agriculture and Livestock.

IICA Action in the Antilles Zone

Perhaps the most important IICA action in the Antilles Zone is the project fostering "campesino" organization in Haiti, where the work of the Development Islets has been oriented at a central level, assuring the country of the necessary institutional capability to plan, manage and evaluate the integral development of micro-regions. In the field, IICA actions were directed towards providing increased support in strictly agronomic aspects, and in training Islet community members to develop their own programs.

In the Dominican Republic, IICA has been working on case studies to determine a typology for "campesino" organization, and on preparing projects to improve the provision of services to "campesino" enterprises. A seminar-workshop was also held, to discuss the development potential of "campesino" organizations.

IICA Action in the Northern Zone

In Costa Rica, IICA continued to work with the Lands and Colonization Institute on its policy of "campesino" settlements, mainly in the areas neighboring the banana company zones of Rio Frio and Coto Sur, with 400 families settled in the former and 1200 in the latter. In the other zones, land titles have already been given out to several hundred families.

Because of changes in agrarian transformation program policies in El Salvador, IICA has been working to complete the evaluation of the Salvadoranean Communal Union. As a



Head table, during the ceremony constituting the Advisory Committee for the Regional Cooperative Program for Agrarian Reform and Colonization in the Southern Zone. Ing. Hernando Bertoni, Minister of Agriculture of Paraguay, attended the meeting.

complementary measure, a seminar/workshop on the development and establishment of "campesino" organization groups and their participation in the agrarian transformation process, was also held. Moreover, an economic survey was completed on the Agricultural Production "Campesino" Associative Enterprises, and a seminar was held on the Evaluation of Training in Associative Unit Organization aspects.

Within the agricultural development project for frontier rural areas in Honduras, IICA has been cooperating on the identification and selection of "campesino" organization and training sub-projects, particularly with respect to initial activities such as the motivation for and getting underway of research and promotion actions for the agricultural production of crops such as corn, beans, wheat and vegetables in demonstration plots at 35 of the municipalities involved in the project.

In Guatemala, IICA has been working mainly on strengthening the National Agrarian Transformation Institute. Moreover, Guatemala hosts the Training and Studies Program on Agrarian Reform in the Central America Isthmus (PRACA) which has been working on at least 16 different projects in the area, amongst its various activities.

An important PRACA activity was the VI Inter-American Meeting of Agrarian Reform Executives held in Guatemala, with the attendance of 60 delegates from the American nations, representatives from Spain and Israel, and observers from the OAS, the Central American Economic Integration Bank, FAO and SIECA. The main topic of the meeting was "Solutions to the 'minifundio' problem". The objectives of the meeting were to become more familiar with

the "minifundio" problems in the American countries; to learn about the different solutions being applied to resolve these problems in some of the countries; and to suggest and discuss other possible solutions, within a context of the existing agrarian structures in the countries. The meeting ended with a declaration whereby the delegates expressed the immediate need to seek more adequate solutions to the "minifundio" problem.

The Eleventh Regular Meeting of Agrarian Reform Executives of the countries of the Central American Isthmus was held in Managua, Nicaragua, in April 1977. The means of financing PRACA activities were discussed, and the operating strategies of the agrarian reform and colonization programs for the 1977-78 period were analyzed. It should be noted that IICA and PRACA subscribed a new agreement in January 1977, which will conclude in December 1981, thereby ensuring program continuity.

In Mexico, IICA worked mainly on training "campesino" organization promoters. There are interesting perspectives opening up for future work on a broad-range program to cover planning, research, organization and training with respect to "campesino" enterprises, in collaboration with the Planning Office of the SRA and the National Agrarian Training Institute of the Secretariat of Agriculture.

In Panama, the Institute continued its work on strengthening technical cooperation aspects on planning associative enterprises for farmers. For the past three years, the IICA office in Panama has been emphasizing the need to establish an adequate training infrastructure at the National Social Development and Agrarian Reform Office, as well as at the "campesino" organization bases. The government has



Inaugural session of the Sixth Inter-American Agrarian Reform Meeting, in Guatemala. In the usual order at the table, are: Mr. Hans Laugerud, First Vice-President of INTA-Guatemala; Dr. José Emilio G. Araujo, Director General of IICA; General Fausto Rubio Coronado, Minister of Agriculture of Guatemala; Mr. Isaac Paiz, President of INTA; Mr. Pablo Campollo, Vice-Minister of Agriculture in Guatemala; and Mr. Leopoldo Sandoval, of IICA.

publicly acknowledged that the settlements need to be strengthened internally if they are to be a means to the economic upgrading of the "campesino" class. A detailed economic, social, administrative and physical diagnostic study is being made of 70 settlements, as a basic project activity, to provide the necessary information to detect the more important flaws to be corrected so as to assure that the settlements function as efficient enterprises.

IICA Action in the Southern Zone

A part from the work entitled "The situation of colonization and agrarian reform in Paraguay" which was carried out in support of the Rural Welfare Institute of this country, perhaps the most important action in the Zone has been the training and settlement of 500 conscripts from the Armed Forces of Paraguay, and the completion of a feasibility study of 40,000 hectares in the Bernardino Caballero Colony, in the Department of Canendiyú. This project is being financed by the Simon Bolivar Fund and the government of Paraguay.

Project duration is for a period of five years and is being administrated jointly by IICA and the National Colonization Committee composed of representatives from the Agricul-

tural Service Office of the Armed Forces, the Fifth Infantry Division, the Ministry of Agriculture and Livestock and the Rural Welfare Institute.

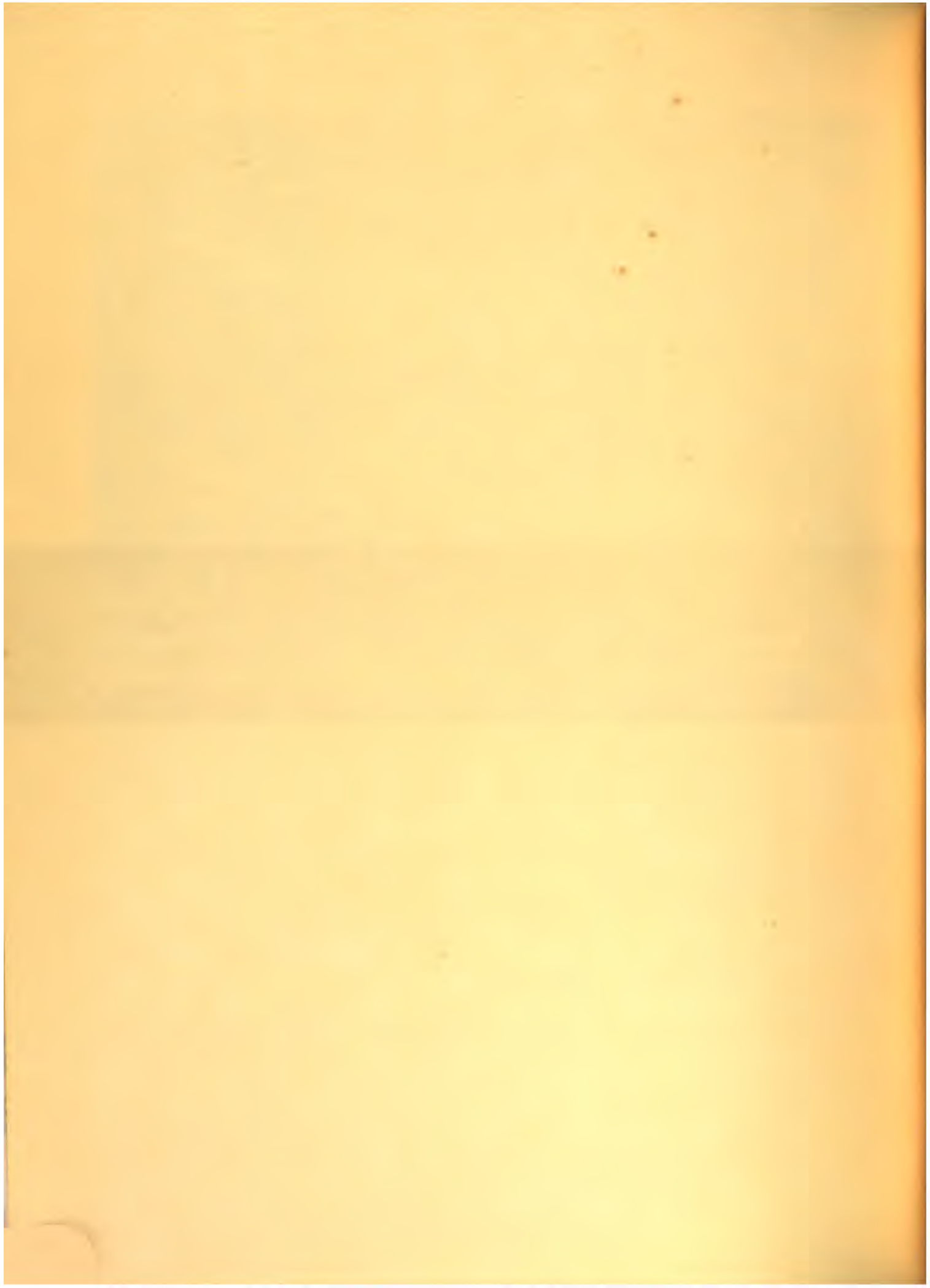
At a ceremony with a number of Paraguayan authorities present, the conscripts were given their licenses and were authorized to form the "Roberto González Ltda." agricultural cooperative, one of four similar colonies contemplated in the agreement. This cooperative encompasses 2000 hectares of land provided by the Military Colonization Office; the cooperative members live on this land, with their families.

As a pilot project of Associative Enterprises, IICA is helping the government in the formulation and testing of an associative production entrepreneurial system as a means to contributing to increased agricultural production and productivity.

In Chile, IICA has been participating with other international agencies on studies for and the formulation of projects for the development of their Region IV.

In Argentina, IICA provided assistance to the National Agricultural Council on production and systems scale studies, so as to be able to maximize their utilization.

Chapter VIII.
IICA AND
AGRICULTURAL POLICY



Chapter VIII

IICA AND AGRICULTURAL POLICY

Introduction

Agricultural planning is an instrument used to ensure that agricultural development efforts are as efficient and as effective as possible. The need to plan the development process in the public agricultural sector is greater when the sectoral structures and forces are weak with a resulting weak development process within a country.

Nearly all the countries in the Americas now have agricultural sectoral planning offices, which clearly indicates that this need for planning has been felt by the governments. However, one of the planning problems in our countries, is to find and adopt the more appropriate planning mechanisms, suited to the individual circumstances encountered in each country, and to have the necessary personnel available to implement the process.

IICA has acquired considerable experience in the field of planning, particularly with respect to personnel training, and is in a position to provide technical cooperation to the member countries, in this field.

Good administration or management is also needed, along with planning, particularly with respect to direction, organization, coordination, follow-up, evaluation aspects, as well as feedback from the planning-implementation process.

The governments of our member countries are recognizing the importance of management aspects. The tremendous demand for services from the IICA/AID management program which was carried out in the countries of the Northern Zone, with some action in Paraguay and Brazil, clearly demonstrates that the need to solve management problems within the rural development process is being felt.

The basic problem in the field of management is the need for agencies, and their administrative procedures, to adapt readily to the needs and dynamics of the development process. The vertical, bureaucratic organization, divided up into sections and other sub-divisions, probably, a serious impediment to development, by dividing efforts, and creating increased coordination problems.

IICA technical cooperation in management has proved to be effective, and there is now an adequate installed capability to implement actions in this field. Moreover, management overlaps with essential aspects of institution building and is therefore of importance in the development of a strategy to strengthen national sectoral agencies.

Hence, the objectives of these institutional programs are: to cooperate on structuring sectoral planning offices; to generate and develop planning methodologies adapted to the

rural sectoral conditions of each country; to design and organize training programs to prepare agricultural inter-disciplinary planning teams; and to identify, prepare and evaluate agricultural projects.

In the specific case of management aspects, efforts will be made to cooperate on the creation and restructuring of the key agencies in the public agricultural sector and the institutional system, as a whole; on the improvement and up-grading of the performance of agencies and institutional systems and sub-systems; on improving and applying management mechanisms (coordination, communications, follow-up, control, evaluation, feed-back and correction); and on research in management aspects and the development of suitable management methodologies.

Forty-one projects have been undertaken within these programs, in the different member countries, as described below:

IICA Action in the Andean Zone

IICA action in Bolivia included a training seminar on agricultural projects and a course on organization and management aspects for departmental directors and heads, of the research, extension and development services in the community. In addition to these more specific activities, IICA has continued to work on reciprocal training activities in agricultural planning and on back-stopping the National Planning Office.

In Colombia, IICA continued its work on strengthening the agricultural planning sub-system; on studying agricultural projects; on administrative up-grading aspects; and on institutional policies for the development of uninhabited tropical areas.

In Ecuador, a diagnostic study of the current agricultural planning situation was conducted, and an IICA/IDB PEPA course was given on pertinent aspects. Three projects were prepared, of which two were selected for the in-service training stage of the course. These projects were approved by the Ministry of Agriculture.

In Peru, IICA continued its work started the previous year, of training the personnel working in sectoral and zone offices of the Ministries of Agriculture and Food, on a process to strengthen the agricultural planning sub-system at the zone and regional level. This work is closely linked with that of the institutions responsible for training in planning and project aspects, seeking at all times, to increase the capability of national agencies.

At the same time, efforts are directed towards seeking to raise the planning sub-system capability in methodological



Mr. Marco Peñaherrera, Vice-Minister of Agriculture, in Ecuador, speaking at the inaugural session of an Agricultural Projects course sponsored by IICA, IDB and the Planning Office of the Ministry of Agriculture.

aspects, as related to the formulation and implementation of concerted production plans at the zone level, and to the actions oriented towards the consolidation of "campesino" enterprises.

Within this strategy, then, several courses and seminars were given with the aim of training professionals in agricultural projects. The institutionalization of training and research programs at the universities was also encouraged, so as to serve as a back-stop to the national planning sub-system. Advisory services were provided the specialized training centers of the sector (CENCIRA), methodological guidelines were provided and projects prepared, in support of the orientation of investments in "campesino" enterprises.

A project was started with the aim of up-grading the organization and management aspects in food zones. A first meeting of the directors and heads at the governing and implementation levels of the production, research and marketing system was held, for Food Zones I (Piura), II (Chiclayo), III (Trujillo), IV (Lima), and X (Huancayo), that is, the directive personnel of the northern part of the coast and from the Central Sierra. An attempt to cover all the areas of the country will be made, during the first phase of this project.

In addition, teaching material and methodologies are being revised for publication, to be used to back-stop these actions to up-grade institutional management aspects for rural development purposes.

The management program also worked in Line of Action II, with three working meetings held on University

Organization and Management for the directive personnel of the National Universities of La Molina (Lima), Técnica at Piura, and Técnica del Altiplano, in Puno. The interest of directive personnel running these centers was roused, to up-grade administrative aspects at their universities so as to be able to introduce changes and innovations.

In Line of Action III, Agricultural Research, this program worked mainly with CRIA IV of Arequipa, on up-grading management aspects at the research centers in Cuzco, Ayacucho, Puno and Tacna, and on improving inter-institutional coordination aspects.

In Venezuela, IICA collaborated with the Agricultural Sectoral Planning Office of the Ministry of Agriculture and Livestock, on the preparation of the 1977 Operative Plan, so as to provide clearly defined specific objectives, goals and policy guidelines for the sector.

IICA's work, here, in institutional strengthening, has been oriented towards reciprocal training and direct advisory services on the elaboration of the annual operative plans; their organization within the guidelines of Plan V of the Nation; and on their evaluation before formulating a new plan for 1978.

IICA is also assisting on the creation of a system to evaluate these plans and the implementation of the Regional Planning Offices to serve as coordinating units for the provision of sectoral support on regional development aspects.

Another of IICA's basic task has been to serve as coordinator on planning aspects between MAC and the auto-



The Board of Directors of the Guatemalan Association of Agricultural Projects Specialists, formed as a result of courses sponsored by IICA and IDB. In the usual order: Flavio Lazos, IICA; Alfredo Sánchez, Treasurer; Mr. Carlos Rodríguez, Secretary; Mr. Guillermo Pérez, President; Mrs. Rosa de Barrios, Pro-secretary; Mr. Julio Gómez, Vice-President; and Miguel Araujo, IICA.

mous institutions, so as to ensure balanced development within the sector.

IICA Action in the Antilles Zone

In Haiti, the sectoral planning project was added to, since the central planning level had been accomplished, but there was still a need for a new orientation towards a regional planning base. This second stage of the project could be established in such a manner as to obtain outside financing. To date, the work accomplished has made it possible for the country to establish a sectoral planning office to serve as a link or bridge between the government and technical assistance being provided for the agricultural sector, so as to formulate a coherent and realistic Five-year Plan.

In Jamaica, IICA cooperated on strengthening the national planning system. In the Dominican Republic, support was provided on the integrated IICA/SEA project, and advisory services were provided to develop a planning methodology for micro-regional levels.

IICA Action in the Northern Zone

In Costa Rica, IICA contributed significantly to the establishment and development of the sectoral planning system. To this end, the following activities were undertaken:

In August 1976, an IICA/MAG/OFIPLAN agreement was signed, within the Simon Bolivar Fund, to support OPSA on the formulation of a National Agricultural Development Plan and to strengthen the Sectoral Planning System. IICA

cooperated on the institutional analysis of the sector; the training of ten technicians in institutional analysis aspects; on preparing a frame of reference and methodology to formulate the National Agricultural Development Plan for the 1978-1982 period; on compiling basic information for the diagnostic study; on training personnel in project specialization areas, and marketing; and on the diagnostic study and solution of institutional problems of some of the sectoral agencies.

IICA action in El Salvador was somewhat limited as to aspects pertaining to the sectoral planning sub-system, since the country is in the process of preparing a national Pre-Plan for Agricultural Development (1978-1982). However, once this is ready, a request for help from the Sectoral Planning Office is expected, in coordination with the planning systems at the agency level.

In Honduras, an institutional analysis was made of the Projects Department, Sectoral Planning Office, Natural Resources Secretariat. Technical assistance and personnel training was also provided the National Promotion Bank on aspects pertaining to the planning of regional development and the identification of projects. In Guatemala, IICA worked mainly on up-grading the operative capacity of the public sector of that country.

In Mexico, IICA activities were oriented mainly towards consolidating and institutionalizing progress achieved in previous years. CONACOSA was replaced by the Agricultural Planning Head Office, within a recently created Programming and Budgets Secretariat. IICA also continued with the training of state planning delegates. At this level, it has been possible to

consolidate Coordinating Committees within the State Agricultural Sector (COCOSAE), which will be able to function in a more integrated manner due to the fusion of the Secretariats of Agriculture and Animal Husbandry and of Hydraulic Resources and the fact that other para-state and autonomous agencies now come under this newly fused secretariat –according to the Public Service Reform Law– which will now serve as sectoral head.

In Nicaragua, IICA has cooperated on the reorganization of the Ministry of Agriculture.

In Panama, IICA worked closely with the Ministry of Agricultural Development on up-grading its administrative-management aspects.

IICA Action in the Southern Zone

IICA action in Brazil, has been concentrated on providing SUPLAN (Planning Office) with support on methodological aspects related to the preparation and implementation of integrated development projects for low income farmers.

IICA has been working mainly on projects in support of regional development in the other countries of the area; programmed goals have been attained.

Chapter IX.
IICA AND
RECIPROCAL TECHNICAL COOPERATION



Chapter IX

IICA AND RECIPROCAL TECHNICAL COOPERATION

Introduction

There is renewed interest in technical cooperation between countries. This was perhaps most evident - at least in Latin America- at the meeting organized by the United Nations Development Program held in Lima, Peru, in May 1976. IICA was particularly pleased at this evidence of renewed interest, since technical cooperation between countries has long been practiced by the Institute.

Since IICA is multinational in nature, its basic strategy concerns institution building in the countries, it is physically present in the member countries, and the fact that its staff is from the region and works in various countries of the Zone and not just in the one where they are assigned, has resulted in a constant and continuous exchange of information and experience which facilitates the identification and diffusion of outstanding aspects of progress achieved in each country. This is all conducive to IICA's fostering and supporting reciprocal technical cooperation actions in the field of agricultural.

Since this type of activity is of considerable importance for the agricultural development of our countries, the Board of Directors of IICA -at the Twelfth Annual Meeting held in 1973- asked that the General Directorate concentrate on identifying, fostering, disseminating and using reciprocal technical cooperation opportunities, and to inform the Board about progress achieved with this type of cooperation between the member countries. This is being done.

A conceptualization of reciprocal technical cooperation

With the experience acquired over the past few years, we have come to the conclusion that it is essential to have the good will and decisive support of the directive levels of national institutions involved in this type of technical cooperation. A clear definition of the respective obligations of institutions and participant technicians is also necessary. Moreover, when IICA is responsible for fostering, organizing and developing concrete, specific activities, this should be done, insofar as possible, on the basis of a direct understanding between the interested countries. The resources needed of cover the cost of this type of action should be available and the countries must resolve any problems resulting from various restrictions of a legal or procedural nature which may hinder reciprocal cooperation actions.

It should also be noted that, in addition, IICA fosters and supports cooperation aspects directed towards a redistribution of resources in favor of relatively less developed countries, in addition to the more traditional forms of reciprocal technical cooperation between countries, since IICA is instrumental in the redistribution of resources in favor of

these countries because of its very form of financing, and at the express behest of its Board of Directors.

Thus, these countries receive greater benefits than what they invest into IICA's operations. The purpose is evident: to seek a reduction in the development inequalities between the different countries, in the corresponding measures.

This process functions at both continental as well as regional levels. In the latter case, for instance, the more developed countries of Latin America provide a subsidy for their lesser developed sister countries, as part of a hemispheric commitment to development, and the reduction of inequality.

We feel, then, that technical cooperation should be understood as a process for the redistribution of services and assistance of developed countries - and in the case of the countries of Latin America and the Caribbean, of the relatively more developed countries- towards countries with less resources and relatively lower development levels. Reasons for this redistributive process, from the point of view of more advanced countries may be, amongst others, political, economic or humanistic in nature. However, if implemented through a multinational agency, a large part of the political and economic content disappears, as compared with bilateral actions, so as to give more room to the humanistic aspect.

Concentrated international effort in one country to solve a specific problem is one form of technical cooperation between countries. In our case, teams of consultants from several Latin American countries are hired for short periods. These teams to do not form a part of IICA's permanent staff core, and return to their countries, after the consultantship has concluded.

Such a system has many advantages; the technician himself, feels great satisfaction when facing the challenge of resolving a problem in another country, while acquiring valuable experience which he may be able to utilize in his own country. Moreover, it reduces the number of technicians in international institutions that leave their countries, for one reason or another, on a more permanent basis.

However, for this system to function properly, the collaboration of governments and institutions is essential, in the sense of allowing their technicians to provide short-term advisory services in other countries.

IICA's recent experience indicates that this type of reciprocal technical cooperation is successful, since the country receiving the assistance is benefited, as well as the one supplying the specialized human element to provide the assistance.



His Excellency General Anastasio Somoza, President of Nicaragua, listens attentively to Colombian and Brazilian technicians visiting Nicaragua to help during the emergency resulting from the appearance of the coffee rust disease in that country. In the usual order: Mr. Klaus Sengelmann, Minister of Agriculture of Nicaragua; General Somoza; Dr. José de Paula Motta Filho, Director, Brazilian Coffee Institute; the Director General of IICA; Dr. Germán Valenzuela, Technical Manager, Colombian Coffee Federation.

The concept of "appropriate technology" and reciprocal technical cooperation

It would seem fitting to say something about the concept of "appropriate technology", since it is in line with the concept expressed above as to significance and the possible ways of applying reciprocal technical cooperation, within the idea of those with more helping those with less. This concept implies the existence of a wide range of available technologies, and the fact that a selection may be made to find what is most appropriate for a specific situation. This does not necessarily mean finding the ideal solution, but does imply the definition of the problem in terms of existing constraints and resources. After that, the solution to improve the situation will be sought, as related to the needs and priorities of the persons most involved, without imposing additional restrictions due to the use of too advanced technologies.

Hence the tremendous need for a so-called "appropriate technology" for rural areas where there are many needs (and

few resources) in such aspects as production, processing, supply of energy, transportation, marketing, markets, and others. Thus, the combination of the reciprocal technical cooperation concept with that of appropriate technologies, would seem an adequate response to some of the problems encountered within the sector.

Some examples of this type of work

A detailed report on the institutional actions in this field is not our purpose here, since it is our belief that all our actions may be classified as reciprocal technical cooperation or assistance. However, some would seem to fit more into this category than others, such as the immediate help provided the Government of Nicaragua to combat the coffee rust disease, by Latin American technicians from Brazil, Colombia, Costa Rica, Guatemala and Mexico; the Latin American wet tropics program; the management and conservation of land and waters program; and the PIDAGRO program in the Dominican Republic, amongst others.

Chapter X.
SIMON BOLIVAR FUND



Chapter X

SIMON BOLIVAR FUND

Introduction

Simon Bolivar Fund projects got underway in April 1976, and may well be considered as examples of participative technical cooperation for agricultural development purposes in the countries of Latin America and the Caribbean.

The institutionalization of positive changes in national capabilities is sought with these projects, as well as up-grading agencies and personnel, so as to more effectively think up, plan and implement national development processes. Thus, Fund projects are formulated and implemented in support of national projects, and therefore contain institution building components. These projects are directed towards:

- Increasing the production and productivity of basic foods and other agricultural products that contribute to the development of member countries, or to the solution of nutritional problems.
- Up-grading aspects pertaining to the marketing of inputs and agricultural products.
- Supporting management aspects and overall or sectoral planning, on the formulation and implementation of national rural development policies and plans.

By 30 June 1977 there were 17 projects underway in 16 countries, and one multinational project for Central America. Thirty-one high-level technicians have been employed to implement these projects; they are qualified in the various, required fields of specialization. These projects represent an annual budget of two million dollars, with about 6 million dollars in national counterpart contributions—in cash or kind—for the respective national projects.

Most of these projects are for more than one year, and will benefit 46 agencies of the agricultural sector; approximately 1,100 functionaries from the different countries of the area will also have been trained in different fields, and about 10,000 families will benefit from this first stage of Fund project implementation.

The areas of Simon Bolivar Fund projects, as per IICA programs, field of action and country, are described below:

Agricultural production

This program back-stops national efforts to increase basic food production, through the provision of technical

cooperation on the formulation and implementation of national actions involving the coordinated efforts of national agencies working on increasing agricultural production and productivity. Special attention is being given to those actions directed towards small farmers.

Program projects include:

- fostering milk production in Tarija, Bolivia;
- fostering legume and cassava production in Guyana;
- fostering the agroindustrial production of quinoa in Peru;
- a feasibility study for the development, production, marketing and industrialization of cassava in Venezuela, and the preparation of the respective national plan;
- a diagnostic study of the production and marketing of improved seed in the countries of Central America;
- strengthening the national improved seed service in Haiti;
- analysis and implementation of hillside farming in Jamaica; and
- a feasibility study on fostering the production, processing and distribution of improved seed in the tropical areas of Mexico.

Regional rural development

IICA cooperation in this area is provided through a program to design and implement research studies on regional resources, and economic and social studies on the optimum utilization of agricultural production natural resources, and on marketing possibilities. This type of cooperation also implies the design and structuring of organization, and the programming and implementation of regional rural development projects.

Program projects include:

- supporting increased production and productivity in the northeast of Brazil through the implementation of irrigated areas;
- strengthening the national system supporting community rural development projects in Haiti;
- institution building as part of the agricultural development project in the rural frontier areas of Honduras;
- regional agricultural development in the northeast of Uruguay.



His excellency the Honorable Albert Belinfanti, Minister of Agriculture in Jamaica, addresses those attending a Field Day at the Allsides hillside farming project.

Conservation and management of land and waters

The aims of this program are to strengthen national institutions responsible for defining and implementing irrigation and land and water conservation and management policies, seeking to improve the efficient utilization of these resources and to up-grade the situation of the landless peasant and small farmer.

In Chile there is a project to expand and up-grade the irrigation systems of the country.

"Campesino" organization

Within this program, IICA is working on strengthening the national institutions which define and implement "campesino" organization policies, from an economic, social and educational view point. Assistance is also provided on research, planning, implementation, evaluation and operation aspects, as related to "campesino" organization actions.

Fund projects within this program, are as follows:

- technical cooperation provided on the planning of associative agricultural production enterprises in Panama; and
- the establishment of associative agricultural production enterprises with Armed Forces conscripts, in Paraguay.

Agricultural planning

Since one of the objectives of this program is to make the agricultural development efforts in the countries more orderly, efficient and effective, IICA is cooperating with the countries on structuring sectoral planning offices and on developing planning methodologies adapted to the rural conditions of each country. Moreover, IICA technical cooperation is also directed towards the design and organization of training programs to form inter-disciplinary teams for rural planning purposes, such as the identification, preparation and evaluation of agricultural projects.

Fund projects within this program, include:

- Assistance on the preparation of Costa Rica's National Agricultural Development Plan;
- back-stopping sectoral planning and management aspects so as to increase food production in Nicaragua; and
- strengthening the programming units of public agricultural sectoral agencies, for the implementation of the Agricultural Development Plan of the Dominican Republic.

An overview of Fund actions may be obtained from Tables 1 and 2, which follow, summarizing the information presented above.



His Excellency, Dr. Carmelo Contreras, Minister of Agriculture and Livestock in Venezuela, and the Director General of IICA, sign an agreement to carry out a feasibility study on the production, industrialization and marketing of cassava in Venezuela.

Table 1. 1976-77 Financial Requirements for the Implementation of Simon Bolivar Fund (IICA) Projects

Country	S.B.F. Contribution US\$	National Counterpart <u>1/</u> US\$
Argentina ²	103,500	129,000
Bolivia	100,500	138,481
Brazil	100,000	3,805,309
Costa Rica	103,315	662,000
Chile	111,200	126,000
Dominican Republic	85,000	64,200
Ecuador ²	102,000	228,960
Guyana	131,000	298,400
Haiti ³	127,000	92,000
Honduras	100,000	141,810
Jamaica	100,000	114,280
Mexico	40,000	20,000
Nicaragua	100,000	169,634
Panama	103,079	185,570
Paraguay	99,525	107,800
Peru	104,522	205,700
Uruguay	107,100	49,700
Venezuela	71,500	69,000
Multinational (Central America)	11,985	
Fund Administration	192,000	
TOTAL	1,993,366	6,603,064

1/ A part of this counterpart contribution is in kind, 2/ In preparation, 3/ Two projects to be implemented this year.

Table 2. Temporary Professional Personnel for Simon Bolivar Fund (IICA) Projects, for their duration, 1976-77

Country	Required area of specialization	No. of Professionals	Man/Months
Argentina	Agroindustry	1	<u>1/</u>
Bolivia	Milk production	3	12
Brazil	Agricultural marketing "Campesino" organization Agricultural production -under irrigation	3	108
Costa Rica	Agricultural projects Agricultural planning Institutional development	3	72
Chile	Conservation and management of natural resources	1	60
Dominican Republic	Agricultural planning Agricultural projects	2	72
Ecuador	Rural development		<u>1/</u>
Guyana	Legume production Project management Agricultural machinery	3	108
Haiti ²	"Campesino organization Improved seed production	2	96
Honduras	Regional development Tropical crops Tropical animal husbandry	3	108
Jamaica	Cropping systems	1	36
Nicaragua	Institutional development Agricultural projects Agricultural programming	3	108
Mexico	Agricultural projects	1	4
Paraguay	Associative enterprises	2	30
Panama	Rural administration	1	30
Peru	Andean crops	3	36
Uruguay	Agricultural projects	1	36
Venezuela	Cassava production and industrialization	1	12
Total		31	928

1/ In preparation

2/ Two projects

Chapter XI.
IICA'S SPECIAL PROGRAMS



Chapter XI

IICA'S SPECIAL PROGRAMS

Introduction

IICA has a number of so-called special programs underway, at the express behest of the Board of Directors or as a result of specific contracts or agreements with national, regional or multinational agencies to cooperate with member countries in seeking solutions to specific problems. These special programs are above and beyond those undertaken with regular quota resources or those being financed by the Simon Bolivar Fund.

Some of these special programs have already been described in other chapters of the report, such as the Program for the Conservation and Management of Land and Waters, and the Training and Studies Program on Agrarian Reform for the Central American Isthmus (PRACA).

In this chapter then, a selection of the programs underway are reported on – whether programs being undertaken by the Institute on its own, or together with national or international agencies. The selection has been based on the possible general interest in, and the broad scope of these programs. Thus, the following special programs are described below:

1. Tropical Agricultural Research and Training Center (CATIE)

As the agro-forestry research work underway at CATIE was described in some detail in the chapter on agricultural research, reference will be made in this chapter, to the Center's education programs.

CATIE's objectives, as per its founding charter, include priority attention in the field of education, and may range from formal post-graduate level education to in-service-training or farmer training services.

CATIE continues to provide valuable assistance within this field, especially for the humid tropical regions, of importance to most of the countries of Latin America and the Antilles, as well as those in the Central American Isthmus. Although it is difficult to measure and evaluate the Center's contribution in this field, it is certainly of significance, since the technical personnel and leaders being trained will form the basis of national institutional structures, of the agricultural development process.

The scarcity of adequately trained personnel throughout the Central American Isthmus, continues to be a constraint common to all countries of the area, thereby hindering the development of national research and training programs.

Also of importance, to the agricultural development process in the area, is the need to reinforce the national

agricultural training centers, both at the university as well as technical school levels, due to the lack of trained personnel at these levels. A training program at the different levels is maintained at CATIE, which has the necessary facilities and is aware of this need to train national technicians.

Since the very beginning CATIE has assumed the obligations outlined in a Convention signed on March 27, 1973 between IICA and the University of Costa Rica, with respect to the responsibilities and administration of the Post-graduate Studies Program. On October 13, 1976, CATIE signed another agreement with the University of Costa Rica, so as to continue the program and assure its juridical-institutional status.

In general terms, the agreement assigns academic responsibilities to the University, and technical responsibilities to CATIE. Activities under this agreement are of two types: post-graduate level education, and intensive short courses.

a. Postgraduate training

CATIE cooperates with the University of Costa Rica on the Graduate Studies Program in Agricultural Sciences and Natural Resources. The pertinent agreement regulates the collaboration of the two institutions, to continue the work in graduate education being carried out in Turrialba, for over 30 years. Graduates from this program hold key positions in research, education and rural development in their countries, particularly throughout the Central American Isthmus.

During the period of this report, 19 professionals graduated with the *Magister Scientiae* degree, distributed by department in the following manner: Tropical Crops and Soils 12; Animal Husbandry 4; and Forestry 3. At this time, there are a number about ready to graduate: Crops and Soils 2; Forestry 7 and Animal Husbandry 4.

Table 3 indicates the number of students of the post-graduate program; those that have graduated since CATIE was created; the number of admission requests for the second semester of 1977; and those admitted. It may also be noted, that 117 professionals have graduated from the *Magister Scientiae* program, since CATIE was created, of which 32 (or 27 percent) are from the countries of the Central American Isthmus and 20 (or 17 percent), are from Costa Rica. The table also demonstrates that of the 40 students that entered the program in 1975 and 1976, 13 (or 32 percent) are from the Central American Isthmus. Moreover, the majority of the 25 students who entered in 1975 have already graduated or are about to. This year, there were 54 requests for admission, a significant increase over the number requesting admission in the past couple of years. Of these, 15 (28 percent), are candidates from the Isthmus; 38 (70 percent) were admitted for the academic –year beginning in July– 9 of these are from

Table 3. Graduates, Students, Admissions and Admission Requests to the UCR/CATIE Post-Graduate Program

	GRADUATES 1973-1977	STUDENTS		1977	
		1975	1976	ADMITTED	AD. REQUESTS
COSTA RICA	20	7	2	6	8
EL SALVADOR	2	-	-	-	-
GUATEMALA	4	1	-	2	2
HONDURAS	1	-	-	-	2
NICARAGUA	2	1	-	-	-
PANAMA	3	1	1	1	3
SUB-TOTAL	32	10	3	9	15
ANTILLES	6	-	-	3	3
MEXICO AND SOUTH AMERICA	79	15	12	26	36
TOTAL	117	25	15	38	54

the Isthmus, or 24 percent. However, it is felt that only 20 or 22 of the 38 candidates will register; that is, those with adequate financing, so that in actual fact, only 38 percent of those requesting admission will actually enter. It is felt that the increased number of requests is yet another reason to reinforce the postgraduate program.

Throughout its existence, the Postgraduate Program has had the assistance and backing of several international organizations and the governments of several developed countries. At present, the following provide student scholarships for the UCR/CATIE program: CIDA-Canada; USAID; Grand Marshal Ayacucho Foundation, Venezuela; IICA, INIAP-Ecuador; and the OAS. The definitive and continued support of the government of Holland is also worth stressing, with 15 scholarships a year over the past several years, for students from the Central American area that have been accepted by the Program.

Technical personnel at CATIE gave 15 of the 23 graduate courses offered and have directed the research work for most of the graduate theses, as an integral part of the departmental research programs. Thesis results are usually published in scientific journals, and due to their very nature, are frequently valid contributions to the solution of specific problems in the area. The number of students doing their research work outside of Turrialba has increased, and should continue to do so, as long as the students can count on essential advisory services where they do their work.

b. Post-graduate level intensive courses

The program has also established several intensive courses, of from 4 to 8 weeks duration, which are at the postgraduate credit level, due to the high quality and programming of the courses, attended mostly by university graduates. These courses are designed in series, on specific subjects, with the aim of up-grading the knowledge of national technicians.

During this past year, an intensive course in Animal Nutrition was given, coordinated by the Tropical Animal Husbandry Department. Nine lecturers from 8 countries participated as professors as well as three CATIE technicians. There were 41 students in the course, of which 13 (or 32 percent) were professionals from the countries of the Central American Isthmus.

c. Thesis work towards a doctorate degree (Ph.D.)

Special, individual arrangements have been made with several Universities of the United States, so that their students may conduct their research work towards a doctorate degree in collaboration with CATIE. At present, there are four graduate students in Turrialba, from U.S. universities.

In addition to formal education and intensive short courses in the cooperative program with the University, CATIE also offers a series of other types of short courses to satisfy personnel training needs at other academic levels; on-the-job-training is also provided.

2. Program for the Development of the American Tropics (IICA-Tropics)

Two important actions within this program were the International Seminar on Development Strategies for the American Tropics, held in Belem, Para, Brazil in cooperation with the Amazon Development Office (SUDAM); and the Meeting on Managing Conservation Units in the Amazon Region, held in Santarém, Brazil.

In the former case, efforts were made to encourage the countries to adopt policies that would permit the incorporation of new areas into the national economies; in the latter, several aspects pertaining to the planning and management of conservation units in Amazon areas were discussed, and the institutional mechanisms responsible for their administration were studied.

Work has also been done on existing legislation in each country, as related to the establishment of conservation units.

In addition, the Documentation Unit of the Program located in Turrialba, Costa Rica, has been providing important information on work underway in the tropics, publishing several "alert bulletins" on work in tropical animal husbandry and forestry. An important document on forestry legislation in each member country of the program was also published.

3. Agricultural Research Institute of Brazil (EMBRAPA)

IICA has continued to work with EMBRAPA on activities related mainly with:



Director General Araujo speaks at the inauguration of the Seventh Inter-American Rural Youth Conference, held in Caracas, Venezuela in October, 1976.

- planning personnel employment
- personnel recruitment and processing
- follow-up on activities undertaken by hired staff
- financial planning, application and follow-up on contracts
- acquisition of technical and scientific equipment and materials;
- general contract administration, with help from the IICA Office in Brazil.

The general working methodology followed for this work has been to make a general study and characterization of the institutional profile and a study of the leadership structure; a survey of needs; on-going analyses of contract performance; the application of management techniques; the integration with higher administration and directive bodies of EMBRAPA; flexibility of actions so as to adjust to the types of leadership within the beneficiary institution.

All programmed activities within the contract were accomplished, with the following results: establishment of EMBRAPA headquarters and a strengthened research network; installation and regular operation of the Computer Center; preparation and processing of terms for a new contract.

A total of 29 professionals - IICA technicians and consultants- worked on the EMBRAPA contract during the period being reported.

4. Hemispheric Marketing Program

The Program has been in the process of being absorbed, over the past years, by the different national programs which IICA has underway on a regular basis. Technical personnel specialized in this field are located at Headquarters in Costa Rica, and in the Dominican Republic, Peru, Brazil, Argentina and Venezuela.

One of the more important activities of the year of a multinational nature, was the Latin American Marketing Seminar held in Costa Rica. Fifty-six delegates attended from member countries, 20 of which represented national institutions. There were also 15 representatives from international agencies.

The papers given at the Seminar have been bound into two volumes; the first containing documents on the presentation of a Model for Technical Cooperation Strategies in Marketing, and the second with the papers presented by the country delegates, international agencies and universities.

Other important activities of the program have already been described in other chapters of this report.

5. Inter-American Rural Youth Program

During the past year, the Inter-American Rural Youth Secretariat of IICA (IICA-SPIJR) worked specifically on the organization, promotion and management of the VII Inter-American Rural Youth Conference, held in Caracas, Venezuela. This event was sponsored by the Government of Venezuela



Dr. José Luis Pando, of IICA's Hemispheric Marketing Program, addresses a National Marketing Seminar, held in Bucaramanga, Colombia.

and the Ibero-American Rural Youth Advisory Council. The turn-out for the meeting was outstanding, with a total of 110 delegates from the following countries: Argentina, Barbados, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Nicaragua, Panama, Puerto Rico, Spain, Trinidad and Tobago, United States of America and Venezuela. The government of Venezuela provided significant technical and financial support for the Conference. Topics of interest to all participants were presented at four plenary sessions, and delegates discussed and analyzed the different aspects of rural youth problems.

SPIJR has continued to coordinate and back-stop activities undertaken by national rural youth programs, in compliance with its original objectives.

Four numbers of the periodic bulletin were published, containing information about the main activities undertaken by the rural youth organizations in the Americas. This publication is distributed to a total of 1,500 directors, technicians, leaders and members of national youth programs, at an inter-American level.

More specifically, SPIJR has been working with IICA's Office in Costa Rica, on the national Self-management Youth Enterprise Project. To this end, a Seminar was given for functionaries of the Youth Office of the Ministry of Culture, Youth and Sports of Costa Rica. Moreover, in view of the interest of the Youth Office in fostering youth enterprises, IICA is supporting their work with a project on the organization and training of members of this new socio-economic organization model for youth.

In addition, SPIJR prepared a project for an evaluation study of rural youth programs, at the behest of the Agricultural Development Office of the Ministry of Agriculture and Animal Husbandry of Costa Rica. To this end, then, a series of meetings with technical personnel working in rural youth programs have been organized and coordinated. The project is being revised, and financing sought.

The project for implementing a Rural Youth Information and Documentation Service is still being processed, but has been approved and will be sponsored by the International Development Research Centre of Canada.

SPIJR also participated at the Consultation Meeting of the United Nations, on Regional Youth Projects, and it was agree to undertake joint, coordinated actions in support of national rural youth programs in the American countries.

SPIJR has also continued to work with the Ibero-American Rural Youth Advisory Council, organizing the Third General Meeting, three technical meetings, publishing the CAIJR bulletin and publishing the resolutions and recommendations taken at the VII Inter-American Rural Youth Conference.

6. IICA Support for Professional and Scientific Associations

IICA has continued to back-stop professional associations such as the Latin American Animal Production Association (ALPA), through its Liaison Secretariat. This includes secretarial services; the publication and distribution of documents; the control and registration of members and the

annual collection of member quotas, as well as providing support at meetings of its directive board or council. ALPA has 1,500 members.

IICA support to the Inter-American Association of Agricultural Librarians and Documentalists (AIBDA) was also continued, with administrative services; physical operating facilities; technical cooperation on AIBDA projects; and the provision of technical and economic support on the organization and holding of the inter-American agricultural librarian and documentalists meetings. AIBDA has 550 individual associate members, and 200 institutional members.

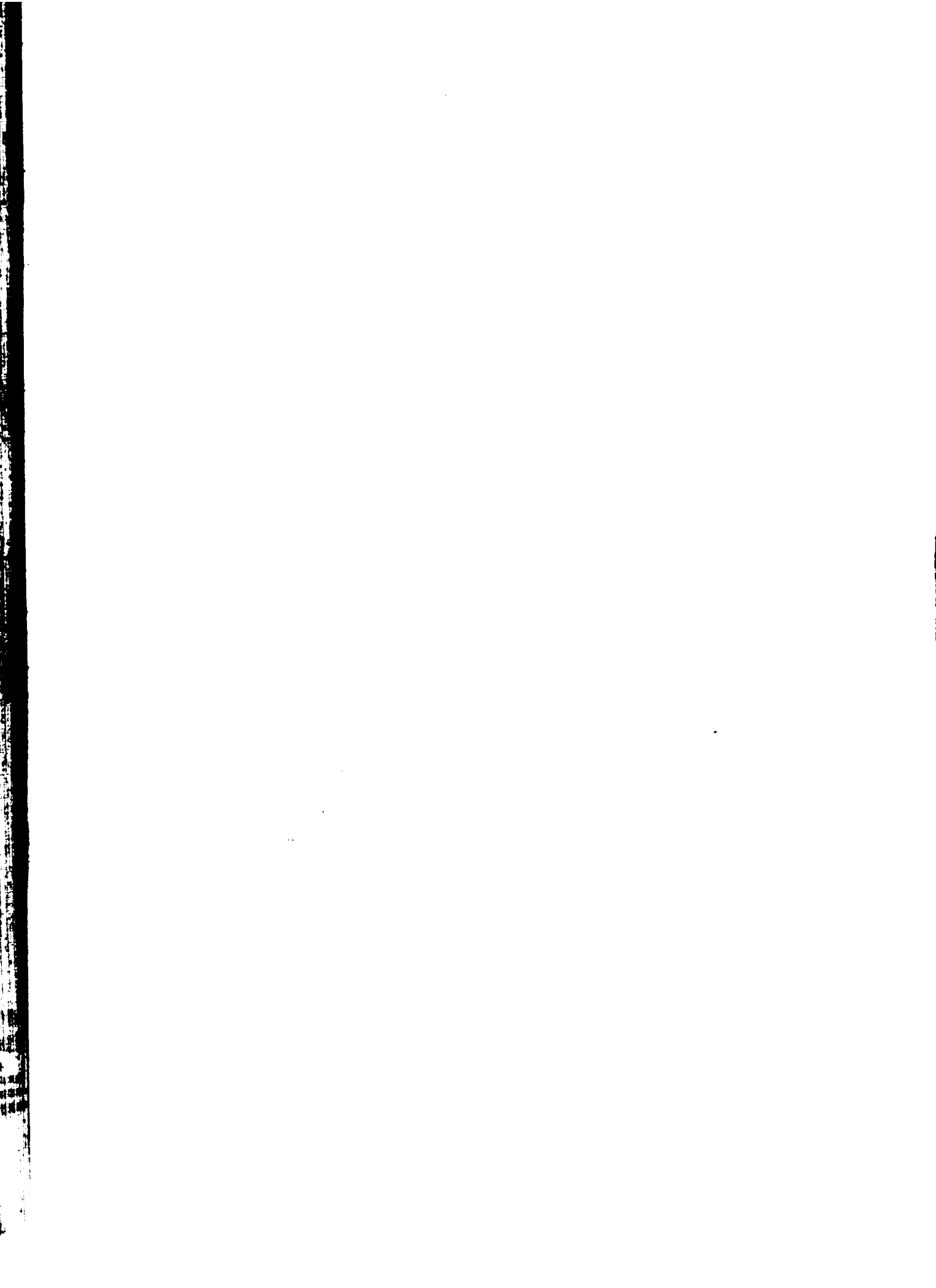
During the past year, Letters of Understanding have been signed between IICA and the Latin American Association of Higher Agricultural Education (ALEAS) and the Latin American Association of Higher Agricultural Post-graduate Education (ALEAP), which include the establishment of secretarial support, publications, activities and meetings, for both associations.

Moreover, IICA support for the Latin American Association of Agricultural Sciences (ALCA) has been confirmed, and consists in funding for secretariat operations for the current period.

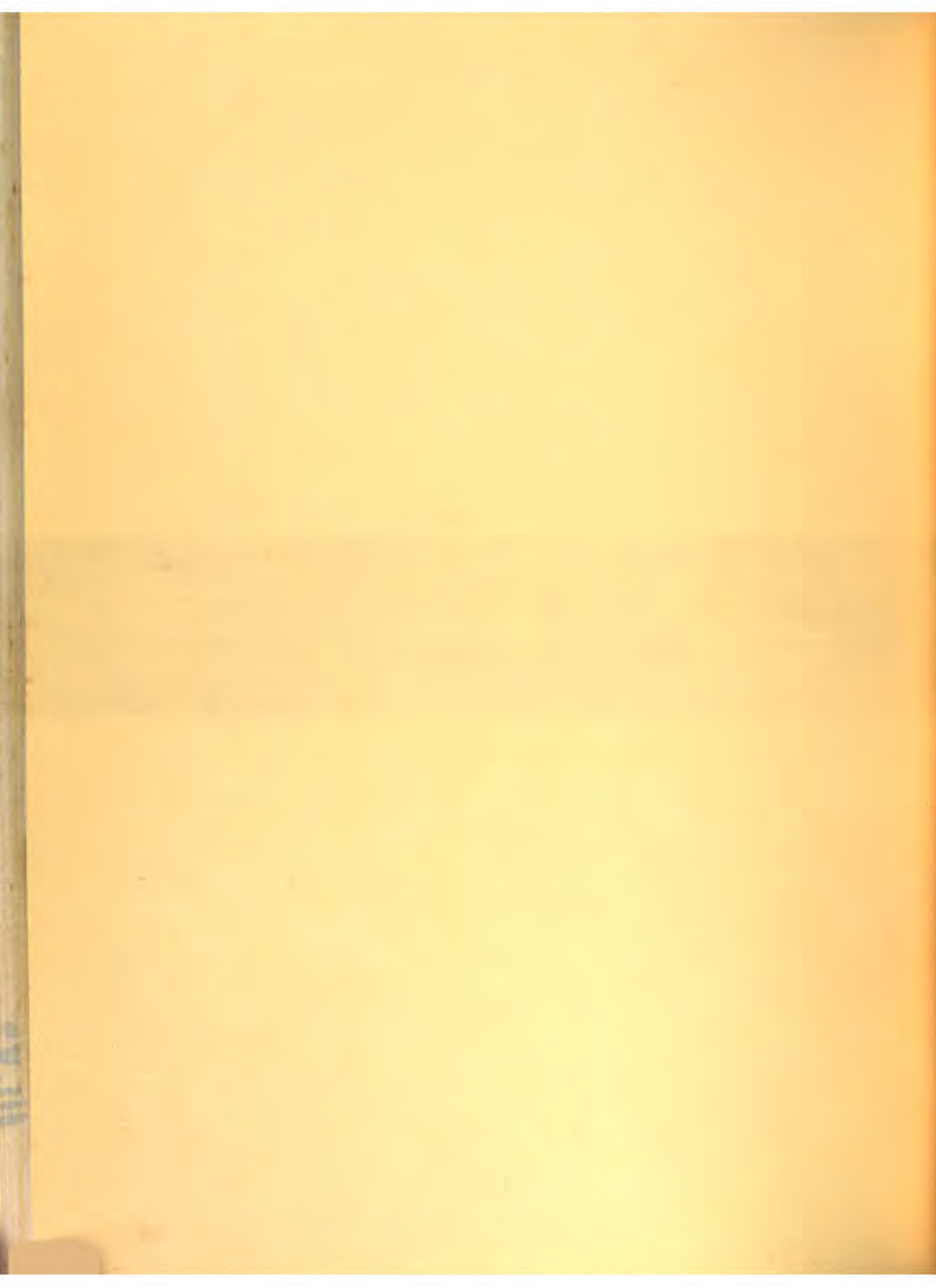
7. High Andes Program

This program has been strengthened by Simon Bolivar Fund projects, particularly with respect to fostering the production and industrialization of quinoa in Peru. Other activities include a course in La Paz, Bolivia, on High Altitude Agricultural Production Systems, where progress achieved on experiments with quinoa, oca, cañihua and tarwi were presented; the eco-physiological factors of these crops were also discussed, as was the possible preparation of a Manual on Andean Agriculture.

Moreover, the High Andes Program published a document based on the work of Peruvian and Bolivian professionals, entitled "Course on Andean Crops" which includes papers on mashua, quinoa, cañihua, oca and tarwi. This was done in collaboration with the Agricultural Technology Institute of Bolivia (IBTA), the Technical University of the Altiplano in Puno, Peru, and the San Antonio Abad University of Cuzco, in Peru. The course emphasizes crops which have received little attention in the past, but which may well contribute in a decided manner to the up-grading of nutritional levels, because of their high rate of adaptability, and richness in genetic variability.



Chapter XII.
FINANCIAL SUMMARY AND ANALYSIS
FINANCIAL STATEMENTS



Chapter XII

FINANCIAL SUMMARY AND ANALYSIS

FINANCIAL STATEMENTS

General Information

Quota collections during the last fiscal year improved considerably over the previous year, and reached the point of 105% against expenditures of 98.4% of the budget approved; thereby compensating for a short collection for the previous year. However, in addition to quotas received as of June 30, 1977, two quota payments for fiscal year 1976-77 amounting to US\$ 877,162 in total were received after the closing of the fiscal year. While they are not reflected in these statements, receipt of those payments at that time helped the cash position considerably.

Two specific items in the execution of the budget - equipment and contingencies- were overexpended as a result of urgent necessities in the transfer to, and occupation of the building. These expenditures were not included in the construction budget, and were essential to the proper functioning of the building. However, these expenditures were well within the total budget expended which, as explained, did not reach 100% of that approved.

General Working Fund

As a result of improved quota collections, the General Working Fund was increased in amount and in liquidity. As stated in the previous paragraph, the Fund does not reflect the amount collected shortly after the closing of the fiscal year. Nevertheless, those payments, at a time of the year which is crucial to the Institute as far as its cash-flow is concerned, were of great importance.

Quotas

Because of increased efforts on the part of the Member States to cancel pending quotas, the amount of quotas receivable as of June 30, was reduced by more than US\$ 400,000.

Accounts and Contributions Receivable

Although these accounts reflect increases, they represent amounts due from outside sources of funding through

Table 4. Statement of Assets and Liabilities as of 30 June 1976 compared with Statement as of 30 June 1977
(UNITED STATES DOLLARS)

ASSETS	30 June		LIABILITIES	30 June	
	1976	1977		1976	1977
Cash on hand & in banks	353,087	497,819	Advance Funds/Operations		121,626
Quotas Receivable			Accounts Payable	69,842	179,339
Contracting States	2,067,799	1,654,818	Third Party Funds	168,512	
Accounts Receivable	586,376	743,846	Rotating Funds	483,814	370,957
Inventories	166,541	83,900	Reserves	44,842	40,000
Prepaid expenses	208,982	60,475			
Expected Contributions	130,952	295,096	TOTAL LIABILITIES	<u>767,010</u>	<u>711,922</u>
Third Party Funds		128,925			
Grants		62,162	NET ASSETS:		
			Funds & Donations		
			Received for Specific Purposes	103,021	
Other Assets	11,334	11,523	General Working Fund	2,655,040	2,826,642
	<u>3,525,071</u>	<u>3,538,564</u>		<u>3,525,071</u>	<u>3,538,564</u>

contracts and agreements, which had not been received precisely by June 30, and were received during the early months of the new fiscal year. This is due to billing requirements, which cannot be completed by June 30. These amounts normally are received on a regular cycle basis, and are not considered doubtful.

Inventories

Inventories were reduced during the year, and will continue to be reduced in the Printing Shop particularly, where large stocks had been built up, due to the paper shortage scare the previous year.

Accounts Payable and Rotating Funds

Accounts payable reflected an increase, because some quota payments were received late in the fiscal year. Due to this temporary cash shortage, some current accounts payable were delayed slightly and cancelled during July.

The Construction Fund closed out slightly overdrawn, because miscellaneous income for last year, largely from earned interest on deposits, did not reach the amount estimated, due to a missing quarterly payment during the month of July of one of the Member Countries, which had been anticipated. Therefore, cash in hand was reduced considerably during the first four month period. This difference will have to be made up in the following period.

The Fund for Replacement of Equipment was slightly overdrawn also, because the cost of telephone equipment for the new building, replacing the older system, was much higher than had been originally estimated. This fund, also, will be balanced in a subsequent period.

Summary

The general financial situation of the Institute is considered to be sound. The cash position improved considerably over the previous year. Still, every effort is being made to assure a continuation of improved quota collections, in order that operations need not be interrupted during those periods when quota payments are not received.

Table 5. Quota Movement for Fiscal Year ending 30 June 1977

(UNITED STATES DOLLARS)

Contracting States	Quotas Receivable 30.6.1976	Quotas for the year 1976-1977	Total owed 1.7.1976	Total collec- tions 1976-1977	Total owed as of 30.6.1977	Increase (Decrease) of balance owed between
						30.6.76 30.6.77
Argentina	493,012	571,893	1,064,905	1,064,905	-	(493,012)
Barbados	-	6,183	6,183	6,183	-	-
Bolivia	95,792	14,684	110,476	95,790	14,686	(81,106)
Brazil	498,342	571,893	1,070,235	1,070,235	-	(498,342)
Canada	-	524,751	524,751	524,751	-	-
Colombia	103,956	119,016	222,972	163,592	59,380	(44,576)
Costa Rica	12,960	14,684	27,644	13,155	14,489	1,529
Chile	339,740	104,332	444,072	321,397	122,675	(217,065)
Dominican Republic	85,031	14,684	99,715	-	99,715	14,684
Ecuador	1,975	14,684	16,659	15,217	1,442	(533)
El Salvador	23,997	14,684	38,681	38,681	-	(23,997)
Guatemala	-	22,412	22,412	22,412	-	-
Guyana	-	14,684	14,684	25,137	(10,453)	(10,453)
Haiti	164,337	14,684	179,021	-	179,021	14,684
Honduras	12,658	14,684	27,342	12,658	14,684	2,026
Jamaica	-	14,684	14,684	14,684	-	-
Mexico	57,951	639,130	697,081	57,951	639,130	581,179
Nicaragua	29,676	14,684	44,360	-	44,360	14,684
Panama	-	14,684	14,684	14,684	-	-
Paraguay	126,470	14,684	141,154	-	141,154	14,684
Peru	22,000	51,780	73,780	22,000	51,780	29,780
Trinidad & Tobago	-	14,684	14,684	14,684	-	-
United States	-	5,105,676	5,105,676	5,105,676	-	-
Uruguay	(100)	44,824	44,724	-	44,724	44,824
Venezuela	-	238,032	238,032	-	238,032	238,032
Sub-Total	2,067,797	8,190,814	10,258,611	8,603,792	1,654,818	(412,978)
Cuba	742,354	81,920	824,274	-	824,274	81,920
TOTAL	2,810,151	8,272,734	11,082,885	8,603,792	2,497,092	(331,058)

Table 6. Comparative Detail on Member State Quota Collection
(UNITED STATES DOLLARS)

	Fiscal year 1975-1976		Fiscal year 1976-1977	
Situation as of July 1				
Prior year quotas	1,363,820 (100%)		2,067,799 (100%)	
Current quotas	<u>7,065,680 (100%)</u>	8,429,500 (100%)	<u>8,190,814 (100%)</u>	10,258,613 (100%)
Payments Received during the Year				
For priors years	678,514 (50%)		1,644,040 (80%)	
For the current year	<u>5,683,187 (80%)</u>	6,361,701 (75%)	<u>6,959,755 (85%)</u>	8,603,795 (84%)
Situation as of June 30				
Collection for prior years	697,985 (50%)		423,758 (20%)	
Collections for the current year	<u>1,369,814 (20%)</u>	<u>2,067,799 (25%)</u>	<u>1,231,060 (15%)</u>	<u>1,654,818 (16%)</u>

Note: Quotas corresponding to Cuba are not included into the amounts and percentages shown in this table

FIGURE 1

COMPOSITION OF THE GENERAL WORKING FUND

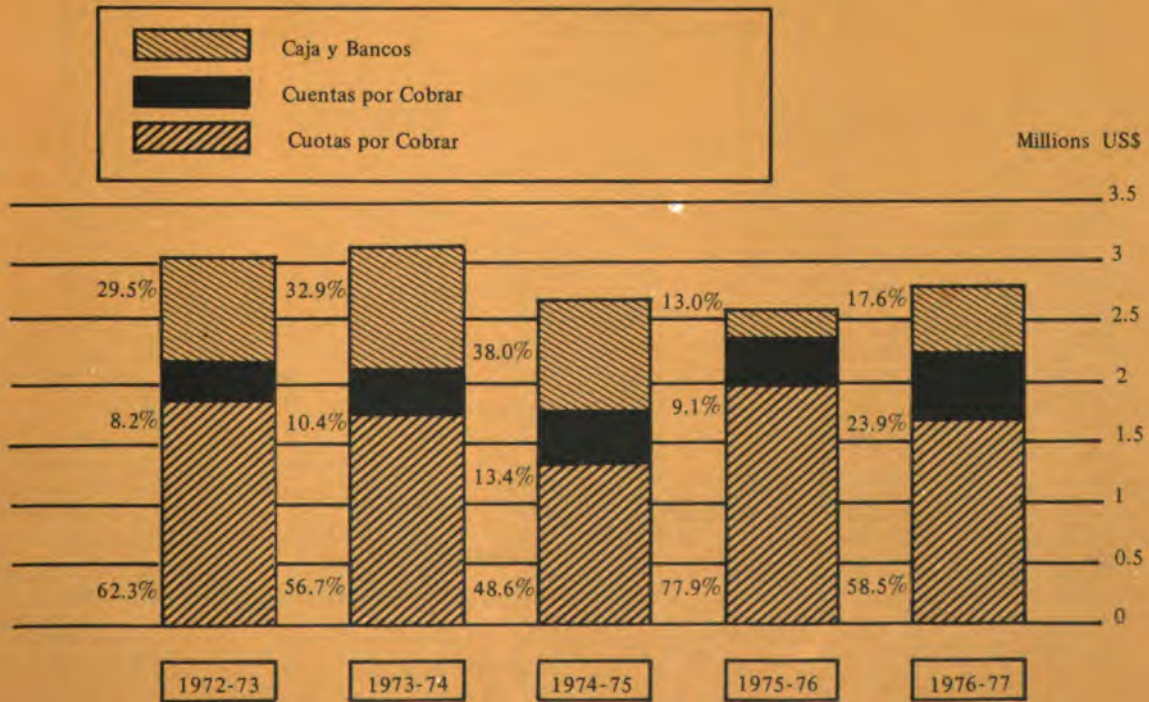


Table 7. General Working Fund Statement

(UNITED STATES DOLLARS)

Balances at the beginning of the year		
Quotas Receivable	2,067,800	
Other	<u>587,240</u>	<u>2,655,040</u>
Difference between Income & Disbursements during the year		
Income	8,235,556	
Disbursements	<u>8,063,954</u>	<u>171,602</u>
Balance at the end of the year		
Quotas Receivable	1,654,818	
Other	<u>1,171,824</u>	<u>2,826,642</u>

Table 8. Summary of Income and Disbursements of the General Working Fund – 1 July 1976 – 30 June 1977

(UNITED STATES DOLLARS)

	INCOME		DISBURSEMENTS
Quotas from Member States	8,190,814	BUDGET	
Others	4,742	Line of Action I	923,024
Reimbursement to the General Working Fund, from Quota Budget	40,000	Line of Action II	721,552
		Line of Action III	463,594
		Line of Action IV	1,396,929
		Line of Action V	8,087
		Line of Action VI	550,086
		Line of Action VII	1,297,255
		Other Activities & Services	426,486
		Coordination & Supervision of Programs	398,215
		General Directorate	961,748
		General Costs & Provisions	343,315
		Equipment (Investments)	48,655
		Contribution (CATIE)	<u>500,000</u>
			8,038,946
		Special Disbursements by Resolutions of the Board of Directors	25,008
TOTAL INCOME	<u>8,235,556</u>	TOTAL DISBURSEMENTS	<u>8,063,954</u>
		Increase General Working Fund	171,602
	<u>8,235,556</u>		<u>8,235,556</u>

FIGURE 2

QUOTAS FROM CONTRACTING STATES

MILLIONS
US\$

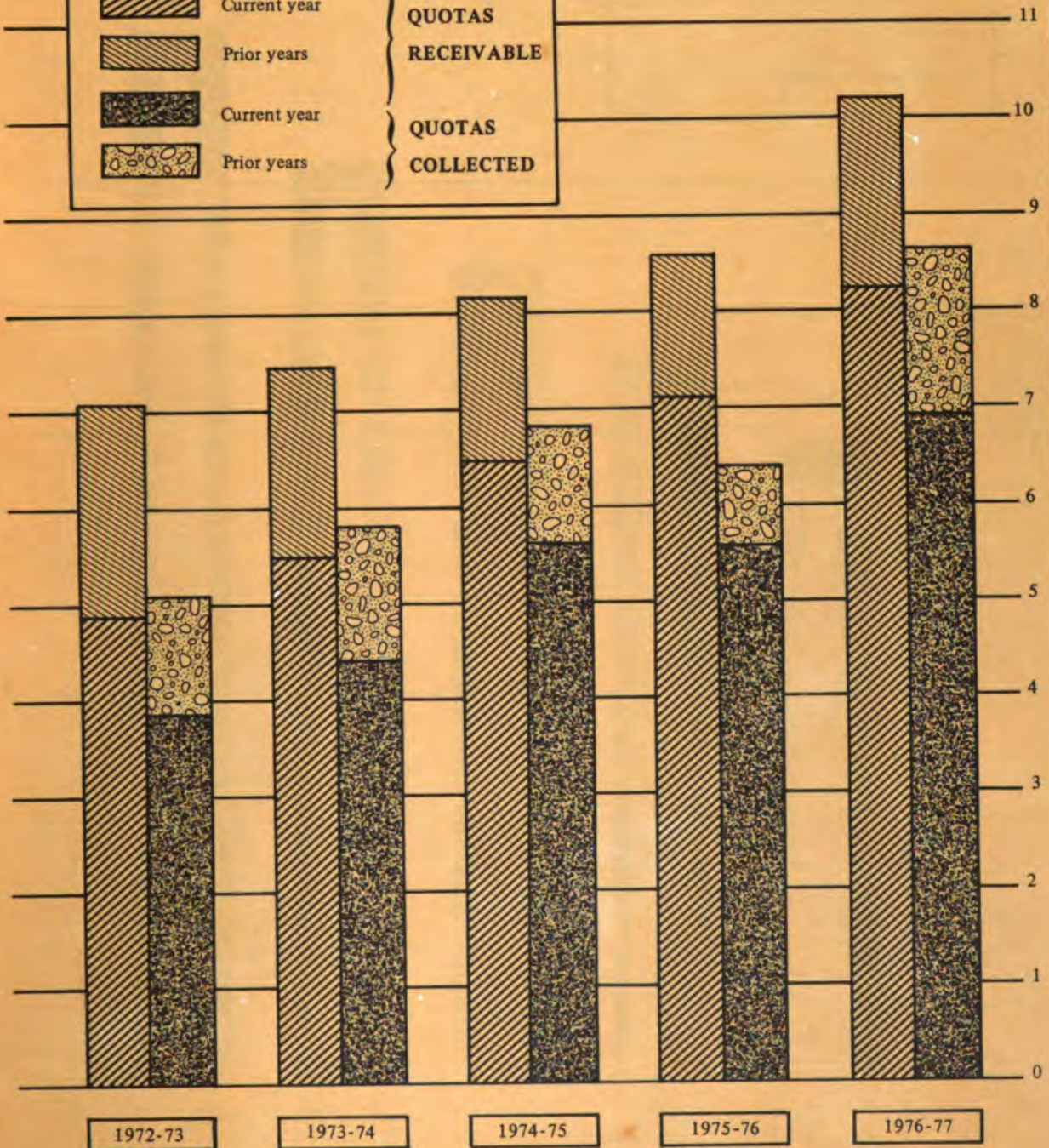
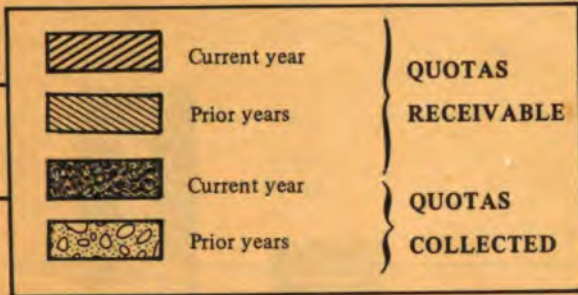
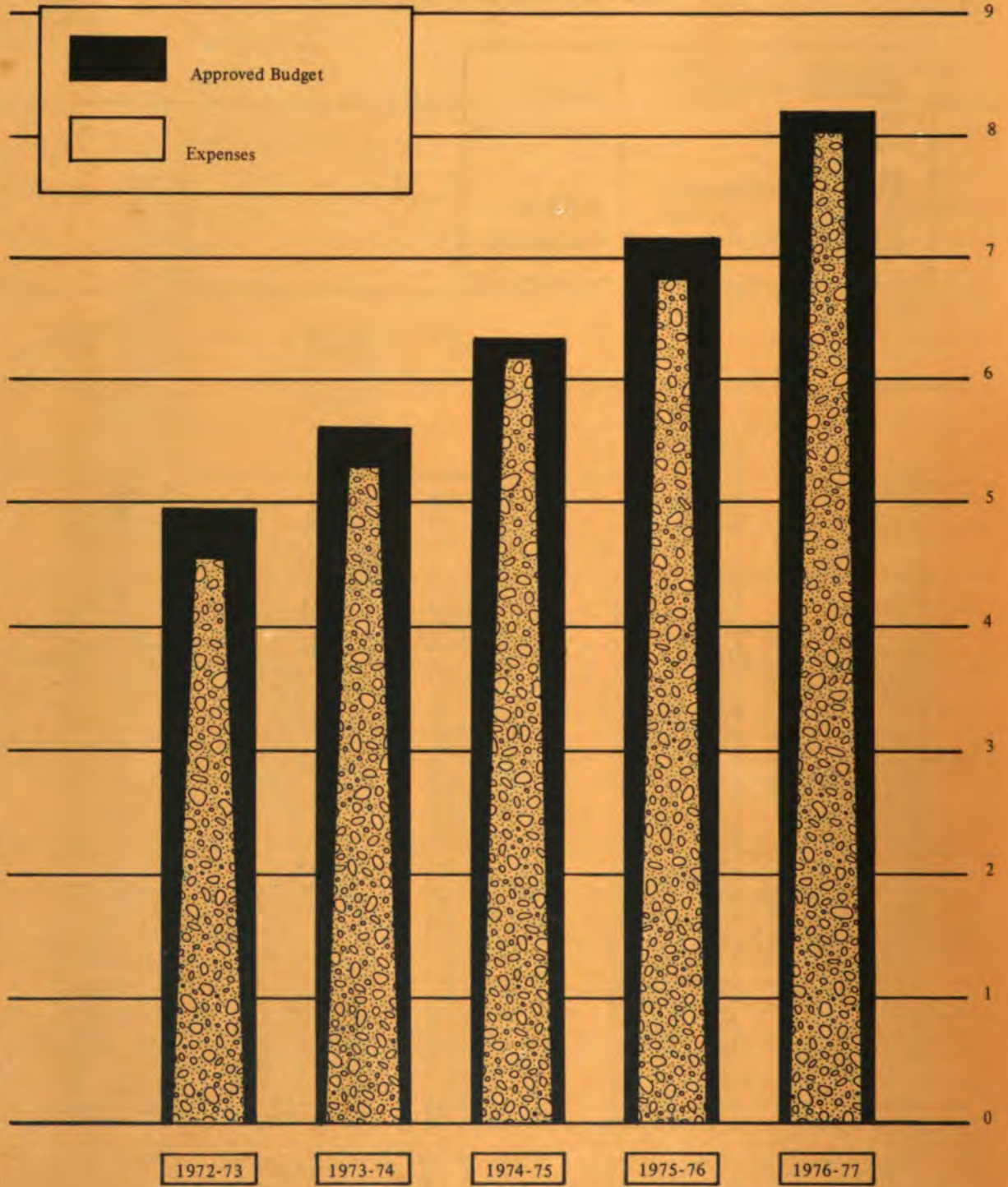


FIGURE 3

PROGRAM BUDGET EXECUTION AS COMPARED TO APPROVED BUDGETS

MILLIONS
US\$



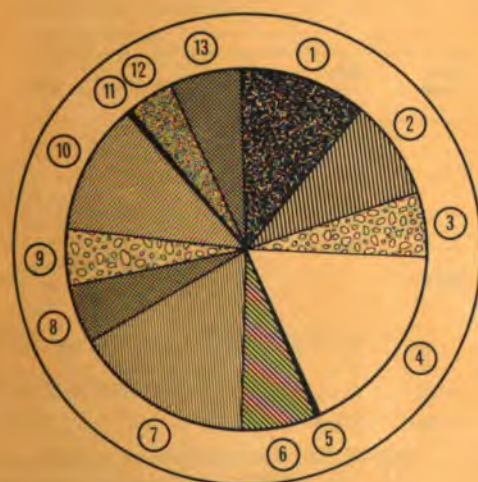
**Table 9. Comparison of Approved Quotas with Collections for the Years 1972-1973 through 1976-1977
(IN THOUSANDS OF DOLLARS)**

Year	Quotas for the year*	Total collections for the year	Percentage
1972-1973	4,982	5,151	103.4
1973-1974	5,550	5,710	102.9
1974-1975	6,320	6,691	105.8
1975-1976	7,063	6,361	90.0
1976-1977	8,190	8,603	105.0

* Does not include the quotas corresponding to Cuba.

FIGURE 4

ACTUAL EXPENSES OF QUOTA FUNDS BUDGET AS PER PROGRAMMING LEVEL



	US\$	%
1. Line of Action I	923,024	11.48
2. Line of Action II	721,552	8.98
3. Line of Action III	463,594	5.77
4. Line of Action IV	1,396,929	17.38
5. Line of Action V	8,087	0.01
6. Line of Action VI	550,086	6.84
7. Line of Action VII	1,297,255	16.14
8. Other Activities and Services	426,486	5.30
9. Coordination and Supervision of Programs	398,215	4.95
10. General Directorate	961,748	11.96
11. Equipment and Furniture	48,655	0.60
12. General Costs and Provisions	343,315	4.27
13. CATIE Contribution	500,000	6.22

Table 10. Comparative Statement of Approved Annual Budgets and Actual Expenses

(IN THOUSANDS OF DOLLARS)

Fiscal Year	Approved Budget *	Actual Expenses	Percentage
1970-71	4,023	3,849	95.7
1971-72	4,425	4,086	92.3
1972-73	4,982	4,597	92.3
1973-74	5,539	5,436	98.1
1974-75	6,320	6,306	99.8
1975-76	7,063	6,744	95.4
1976-77	8,190	8,063	98.4

* Does not include quotas corresponding to Cuba.

Table 11. Budget Execution distributed by Level of Programming and Budget Units

(UNITED STATES DOLLARS)

	Andean Zone	Northern Zone	Antilles Zone	Southern Zone	CIDIA	Operations	Tech. Asst. & Planning	General Directorate	CATIE	TOTAL
Line of Action I	79,182	206,558	75,078	218,903	343,303					923,024
Line of Action II	200,731	174,501	59,742	286,578						721,552
Line of Action III	161,967	71,446	54,669	175,512						463,594
Line of Action IV	314,759	414,557	211,956	455,657						1,396,929
Line of Action V		5,668		2,419						8,087
Line of Action VI	187,791	203,533	58,496	100,266						550,086
Line of Action VII	327,357	123,287	163,120	343,765			339,726			1,297,255
Other Activities & Services	2,640	3,263	4,903	7,253		408,427				426,486
Coordination & Supervision of Programs	78,173	112,172	61,013	118,449	28,408					398,215
Executive Offices								961,748		961,748
Equipment (Investments)	3,377	14,217	17,659	4,717		1,987		6,698		48,655
Resol. Bd./Directors (Coffee Rust)		25,008								25,008
SUBTOTAL	1,355,977	1,354,210	706,636	1,713,519	371,711	410,414	339,726	968,446		7,220,639
General Costs & Provisions*	86,756	86,241	43,498	103,509	23,311					343,315
CATIE Contribution									500,000	500,000
TOTAL	1,442,733	1,440,451	750,134	1,817,028	395,022	410,414	339,726	968,446	500,000	8,063,954

* Expenses have been distributed according to the percentage presented in the Program-Budget for 1976-1977

SIMON BOLIVAR FUND

General Information

Actually, the fiscal year 1976/77 was the first year of active operation. During the year, contributions to the Fund were received from the Governments of Venezuela and Panama, for a total amount of US\$ 2,012,500. Expenditures authorized amounted to US\$ 1,137,519.

General Working Fund

This Fund which showed a balance of US\$ 200,000 at the close of the previous fiscal year, was increased by US\$ 200,000 at the end of fiscal year 1976/77, providing for a sound and liquid situation to support ongoing operations during the periods when contributions are not received.

Advance Funds for Operations

This amount represented advances to IICA Country Offices on the basis of expenditure estimates as of June 30; and for operational expenditures for July of the new fiscal year.

Summary

Activities carried out with financing from this Fund got off to a good start, considering the normal delays that come from signing an agreement in each case with the specific country, approving projects, and recruiting personnel.

The Fund is considered to be sound financially, and together with the General Working Fund, will provide for continuity of projects initiated within a safe time horizon.

**Table 12. SIMON BOLIVAR FUND
STATEMENT FOR THE 1976-1977 FISCAL PERIOD**

Detail	Indiv. Contribution	Amount
INCOME		
Contribution Venezuelan	US\$ 2,000,000.00	
Panamanian Contribution	12,500.00	
Capital Interests:		
1975-1976 Period	20,730.03	
1976-1977 Period	<u>86,724.15</u>	
Income Total	<u>US\$ 2,119,954.18</u>	<u>US\$ 2,119,954.18</u>
EXPENDITURES		
Expenditures for the Period 1976-1977	US\$ 937,519.24	
Increase in the General Working Fund	<u>200,000.00</u>	
Total Expenditures	<u>US\$ 1,137,519.24</u>	<u>US\$ 1,137,519.24</u>
Balance transferred to Account "Budget Surplus from 1976-1977 Period"	US\$ 982,434.94

**Table 13. SIMON BOLIVAR FUND
FINANCIAL STATEMENT TO 30 JUNE 1977**

CASH ON HAND & IN BANKS	US\$ 1,045,208.58	BUDGET SURPLUS	US\$ 2,775,570.61
		1975-1976 Period	US\$ 1,793,135.67
		1976-1977 Period	<u>982,434.94</u>
PREPAID EXPENSES	8,736.00	GENERAL WORKING FUND	400,000.00
		Amount assigned 1975-1976	US\$ 200,000.00
		Amount assigned 1976-1977	<u>200,000.00</u>
SHORT-TERM DEPOSITS	2,000,000.00		
ADVANCE FUNDS/OPERATIONS	<u>121,626.03</u>		
Total	<u><u>US\$ 3,175,570.61</u></u>	Total	<u><u>US\$ 3,175,570.61</u></u>

APPENDICES



Appendix I.
IICA'S ACTIVITIES DURING THE
1976-77 PERIOD



IICA'S ACTIVITIES DURING THE 1976-77 PERIOD

The activities described in the following list and summarized in the Table do not represent the total number of activities carried out by IICA, as many are included as part of others, and some had not been completed by the end of the period covered by this report. Even with these exceptions however, the total number of activities carried out by the Institute during this period, is somewhat greater than the total for last year (975 activities within the Lines of Action in the Member States, as compared to 959 for last year).

Summary of IICA Activities, by Lines of Action and by Country

L I N E S O F A C T I O N

	I	II	III	IV	V	VI	VII	Support Activities	Other Activities and Services	Total/ Country
Argentina	9	7	3	28	—	3	5	2	—	57
Barbados	—	—	—	—	—	—	—	1	—	1
Bolivia	2	3	7	7	—	—	3	3	—	25
Brazil	13	17	16	24	1	—	13	2	—	86
Colombia	9	15	3	17	—	7	13	3	—	67
Costa Rica	48	5	1	9	—	—	33	—	54	150
Chile	6	11	3	10	—	1	1	3	—	35
Dominican Republic	4	1	—	11	—	2	5	3	—	26
Ecuador	4	3	2	2	—	2	6	2	—	21
El Salvador	6	4	1	12	—	6	1	—	—	30
Guatemala	10	3	3	5	—	4	3	—	—	28
Guyana	2	2	—	6	—	—	—	2	—	12
Haiti	2	3	—	8	—	1	16	2	—	32
Honduras	7	7	2	10	9	15	7	—	—	57
Jamaica	1	—	—	1	—	—	—	2	—	4
Mexico	3	13	—	8	—	—	3	3	—	30
Nicaragua	3	2	3	7	—	1	7	—	—	23
Panama	1	3	8	4	—	10	3	—	—	29
Paraguay	4	6	5	4	—	18	8	2	—	47
Peru	4	5	12	27	—	3	10	4	—	65
Trinidad and Tobago	—	—	—	—	—	—	—	1	—	1
Uruguay	8	5	3	15	—	—	3	2	—	36
Venezuela	2	12	11	7	—	9	7	4	—	52
Multinational Activities	18	—	12	7	1	6	12	—	4	60
Other Countries	—	—	—	—	—	—	—	1	—	1
TOTAL	166	127	95	229	11	88	159	42	58	975

ARGENTINA

Line I: Analysis and Information on Rural Development

1. Elaboration and up-dating the Diagnostic Study on the Situation and Tendencies of the Agricultural Sector in Argentina (1 July 1976 through 30 June 1977, Buenos Aires). Activity I.SA.111
2. Preparation of an IICA Medium-Term Indicative Plan for Argentina (1 July 1976 through 30 June 1977, Buenos Aires). Activity I.SA.112
3. Improve IICA's Joint, Formal Consultation and Planning Mechanisms with Argentinan Agencies (1 July 1976 through 30 June 1977, Buenos Aires). Activity I.SA.113
4. Attendance at the Planning Meeting for the Southern Zone (June 1977, Buenos Aires). Activity I.SA.114
5. Conferences on Aspects Related to Agricultural Development in Argentina (1 July through 30 June 1977, Buenos Aires). Activity I.SA.115
6. Cooperation provided on the Functioning of SNICA's Advisory Council (1 July 1976 through 30 June 1977, Buenos Aires). Activity I.SA.211
7. Collaboration provided on the Preparation of Operative Documents to be used by SNICA Components (1 July 1976 through 30 June 1977, Buenos Aires). Activity I.SA.212
8. In-service Training provided for SNICA personnel (1 July 1976 through 30 June 1977, Buenos Aires). Activity I.SA.214
9. Support provided SNICA's Basic Units (1 July 1976 through 30 June 1977, Buenos Aires). Activity I.SA.215

Line II. Agricultural Education

1. Cooperation provided to DNEA on the Analysis of Agricultural Job-training possibilities, at middle and post-secondary Educational Levels (1 July 1976 through 30 June 1977, Buenos Aires). Activity II.SA.111
2. National Technical Meeting on Studies to Determine the Demand for Skilled Labor in the Agricultural Sector (August through December 1976, Buenos Aires). Activity II.SA.112
3. Cooperation provided UNNE on the Regional Diagnostic Study of Educational Necessities (1 January through 30 May 1977, Corrientes). Activity II.SA.113
4. Support provided the National University of Lujan on its Agricultural Training Project (1 July 1976 through 30 June 1977, Buenos Aires). Activity ILSA.211

5. Advisory Services provided to the National University of Santiago del Estero (July - December 1976, Buenos Aires and Santiago del Estero). Activity II.SA.212
6. Collaboration provided on restructuring Post-Graduate Training Programs (1 July 1976 through 30 June 1977, Buenos Aires). Activity II.SA.213
7. Cooperation on the Revision of the Agricultural Studies Plan at the University of La Plata (September 1976 through January 1977, La Plata). Activity II.SA.214

Line III: Agricultural Research

1. Collaboration provided on the Seminar concerning INTA's Administrative Aspects and Management (November 1976 through May 1977, Buenos Aires). Activity II.SA.111
2. Support provided on the Administrative Training Plan for INTA Personnel (September through October 1976, Salta). Activity III.SA.112
3. First Regional Course in Agricultural Extension (4 October through 6 November 1976). Activity III.SA.113

Line IV: Fostering Agricultural Production

1. Cooperation provided the National Agrarian Council on Case Study Evaluation of Settlements in Different Areas (1 July 1976 through 30 June 1977, Buenos Aires). Activity IV.SA.111
2. Collaboration provided the Ministry of Agriculture and Livestock of the Province of Formosa on Establishing a Colonization Agency (1 July 1976 through 30 June 1977, Formosa). Activity IV.SA.112
3. Support provided the Colonization Institute of the Province of Chaco (July through December 1976, Chaco). Activity IV.SA.113
4. Training on the Elaboration and Evaluation of Colonization Projects (April through June 1977, San Salvador de Jujuy). Activity IC.SA.114
5. Cooperation provided CAN on the revision of a Draft Colonization and Structure Law (30 September through 10 December 1976, Buenos Aires). Activity IV.SA.115
6. Cooperation provided the Provincial Cotton Board of Formosa on an Administrative Management Study (1 July 1976 through 30 June 1977, Formosa). Activity IV.SA.116
7. Diagnostic Study of the National Institutional Sub-system for the Conservation and Management of Land and Waters (1 July 1976 through 30 June 1977, Buenos Aires). Activity IV.SA.211

8. Technical Assistance in up-dating Legal Norms and Regulations for the Conservation and Management of Land and Waters (1 July 1976 through 30 June 1977, Buenos Aires, La Pampa and Pedro Luro). Activity IV.SA.212
 9. II National Course on the Systematization of Irrigation Lands (14-25 March 1977, Viedma, Prov. de Río Negro). Activity IV.SA.213
 10. High-level Short Courses on Technical Aspects of Interest to National Sub-system Agencies, on the Conservation and Management of Land and Waters (20-24 September 1976 and 7-11 March 1977, Buenos Aires). Activity IV.SA.214
 11. Cooperation to Reinforce Agricultural Hydraulic Education in National Universities (1 October 1976 through 30 March 1977, Buenos Aires, Santa Rosa and Pedro Luro). Activity IV.SA.215
 12. Cooperation on the Study of Crop Alternatives for the Introduction of Oriented Credit Plans in the Irrigation Area of CORFO-Colorado (1 July 1976 through 30 June 1977, Pedro Luro and Buenos Aires). Activity IV.SA.218
 13. Technical Assistance on Formulating a Request for International Credit for the Rehabilitation and Improvement of Irrigation and Drainage Infrastructure in the Irrigation Area of CORFO-Colorado (1 July 1976 through 30 June 1977, Pedro Luro and Buenos Aires). Activity IV.SA.219
 14. Collaboration on the Organization of a Price Information System of some Perishable Products (1 July 1976 through 30 June 1977, Buenos Aires). Activity IV.SA.411
 15. Collaboration on the Analysis of Methodologies utilized in Setting Agricultural Prices (1 July 1976 through 30 June 1977, Buenos Aires). Activity IV.SA.412
 16. Collaboration provided on the Analysis of Relative Input-Product Prices (1 July 1976 through 31 December 1976, Buenos Aires). Activity IV.SA.413
 17. Collaboration provided on Determining Homogeneous Cost Zones (1 July 1976 through 30 June 1977, Buenos Aires). Activity IV.SA.414
 18. Collaboration provided the Ministry of Agriculture and Livestock of Chaco, on the Organization of an Integral Marketing Information System (1 July 1976 through 30 June 1977, Chaco). Activity IV.SA.421
 19. Collaboration provided the Ministry of Agriculture and Livestock of Chaco on Marketing Studies for Regional Products (1 July 1976 through 30 June 1977, Chaco). Activity IV.SA.422
 20. Collaboration provided NEA Marketing Agencies in Training Marketing Personnel (1 July 1976 through 30 June 1977, Posadas y Misiones). Activity IV.SA.423
 21. Cooperation provided on NEA Livestock Enterprise Studies (1 July 1976 through 30 June 1977, Formosa). Activity IV.SA.511
 22. Cooperation provided on Livestock Enterprise Studies in the Western Invernada Region (1 July 1976 through 30 June 1977). Activity IV.SA.512
 23. Cooperation on Livestock Enterprise Studies in the Milk-producing Cordobesa-Santafesina Basin (1 July 1976 through 30 June 1977, Villa María, Córdoba). Activity IV.SA.513
 24. Discussion, Publication and Diffusion of the Livestock Enterprise Studies (1 July 1976 through 30 June 1977). Activity IV.SA.514
 25. International Meeting on Livestock Enterprise Studies and their Application to the Development of Animal Husbandry (30 November through 3 December 1976, Mar del Plata). Activity IV.SA.515
 26. Cooperation provided on Training in Oriented Credit Plans (December 1976, Buenos Aires). Activity IV.SA.712
 27. Agroindustrial Development in Irrigation Areas of Argentina (April through June 1977, Buenos Aires). Activity IV.SA.
 28. Support provided on the World Conference on Rights and Administration of Waters (March 1977, Mar del Plata). Activity IV.NH.215
- Line VI: Fostering and Implementing Structural Change**
1. Collaboration provided CAN and Provincial Land Agencies on the Formulation and Discussion of Patterns for Operating Agrarian Enterprises (1 July 1976 through 30 June 1977, Buenos Aires). Activity VI.SA.211
 2. Training provided National Agency Personnel on the Operation and Fostering of Large Scale Agrarian Enterprises (1 July 1976 through 30 June 1977, Corrientes). Activity VI.SA.213
 3. Participation in the Seminar for Rural Community Technicians and Leaders (22 March 1977, Buenos Aires). Activity VI.SA.214
- Line VII: Administration of Agricultural Policy**
1. Cooperation provided in Training on the Preparation and Evaluation of Agricultural Projects (15 November 1976 through 30 June 1977, Neuquén). Activity VII.SA.111
 2. Support provided SEAG on the Preparation of Agricultural Development Projects (1 July 1976 through 30 June 1977, Buenos Aires). Activity VII.SA.112

3. Collaboration provided on the Formulation of a Regional Development Project in NEA (October 1976, Salta). Activity VILSA.311
4. Collaboration provided on the Formulation of a Regional Development Project in NEA (September through December 1976, Misiones). Activity VILSA.312
5. Course on the Preparation and Evaluation of Agricultural Development Projects (March through June 1977, Tacumán). Activity VILSZ.113

BOLIVIA

Line I: Analysis and Information for Rural Development

1. National Meeting of Agricultural Librarians and Documentalists in Bolivia (August 22-24, 1976, La Paz). Activity LAB.212
2. Coordination of Support Activities to do with the Creation of an Agricultural Information Sub-system (October 31 to November 3, 1976, La Paz). Activity I.D.316

Line II: Agricultural Education

1. Cooperation provided the National Higher Education Council (1 July 1976 through 30 June 1977, La Paz and Santa Cruz). Activity ILAB.111
2. Cooperation provided ABIEAS and its Annual Meeting (1 July 1976 through 30 June 1977, La Paz and Oruro). Activity ILAB.112
3. Cooperation and Direct Support provided the University of San Simon and Gabriel René Moreno (1 July 1976 through 30 June 1977, La Paz, Cochabamba and Santa Cruz). Activity ILAB.113

Line III: Agricultural Research

1. National Agricultural Research and Extension Plan (May 1977, La Paz and Cochabamba). Activity III.AB.111
2. Training Workshop for IBTA Researchers and Extensionists (April 11-23, 1977, Cochabamba). Activity III.AB.112
3. Support provided on the Organization and Management of the Bolivian Institute of Agricultural Technology (IBTA) (December 2-17, 1976, La Paz). Activity III.AB.113
4. Training Course for Agricultural Extensionists and Researchers of the Altiplano (April 11-23, 1977, Cochabamba). Activity III.AB.115
5. Preparation of a Basic Methodology and Collaboration provided IBTA on a Study of the Agro-systems of the Northern Altiplano (August 1976 through May 1977). Activity III.AB.311
6. Course on Highland Agricultural Production Systems (February 1977, La Paz). Activity III.AB.312

7. Fostering Research on Agro-systems at the Belen and Patacamaya Experiment Stations (August 1976 through May 1977, Belen and Patacamaya). Activity III.AB.313

Line IV: Fostering Agricultural Production

1. Support provided the Development Committee of Beni on the Preparation of a Basic Study of the Agricultural Sector (October 1976 through June 1977, Trinidad Beni). Activity IV.AB.311
2. Support provided the Development Corporations of Cochabamba and Santa Cruz on Revising their Agricultural Promotion Programs (October 1976 through June 1977, Cochabamba). Activity IV.AB.312
3. Revision and Consolidation of the Agricultural Programs at Tarija and Chuquisaca (October 1976 through June 1977, Sucre, Tarija). Activity IV.AB.314
4. Design and Getting Underway of a Marketing Program for Agricultural Products for CORDEPAZ (December 5-12, 1976 and May 8-22, 1977, La Paz). Activity IV.AB.316
5. Advisory Services provided the Forestry Development Center of the Preparation of a National Forestry Development Plan (July 1976 through May 1977, La Paz, Santa Cruz and Tarija). Activity IV.AB.811
6. Working Meeting on the Planning and Implementation of Forestry Research Programs (November 1976 through May 1977, La Paz, Santa Cruz and Tarija). Activity IV.AB.812
7. National Course on Forest Plantations (May to June 1977, Cochabamba). Activity IV.AB.813

Line VII: Administration of Agricultural Policy

1. Support provided on the Implementation of the Agricultural Development Plan (June 14-18, 1977, La Paz). Activity VII.AB.111
2. Seminar on Training in Agricultural and Integrated Rural Development Projects (May to June 1977, La Paz). Activity VII.AB.113
3. Course on Organization and Management for Directors and Department Heads of the Research, Extension, Community Development and Colonization Services of the Ministry of Agriculture and Farming Affairs (April 25-29, 1977, La Paz). Activity VII.AB.115

BRAZIL

Line I: Analysis and Information for Rural Development

1. Diagnostic Study of the Situation and Tendencies of the Agricultural Sector of Brazil (July to November 1976, Rio de Janeiro). Activity I.SB.111
2. Annual Programming Meeting (February 1977, Rio de Janeiro). Activity I.SB.112

3. Meeting of the National Programming Committee of IICA in Brazil (February 1977, Brasilia, D.F.). Activity I.SB.113
4. Participation in the Annual Programming Meeting of the Regional Office for the Southern Zone (June 1977). Activity I.SB.115
5. Training of Agricultural Librarians and Documentalists from Higher Agricultural Education Institutions (Viçosa, MG). Activity I.SB.211
6. Support provided on the Publication of Specialized Bibliographies (1 July 1976 through 30 June 1977). Activity I.SB.215
7. Participation in the National Agricultural Information and Documentation System and in AGRINTER (October 1976, Brasilia, DF). Activity I.SB.216
8. Support provided SNIR on the Creation and Organization of the National Agricultural Library (1 July 1976 through 30 June 1977, Rio de Janeiro and Brasilia, D.F.). Activity I.SB.221
9. Provision of Advisory Services to Agricultural Documentation Libraries and Centers of the Research, Extension and Agricultural Promotion Agencies (1 July 1976 through 30 June 1977). Activity I.SB.222
10. Training of Agricultural Librarians and Documentalists (Viçosa, MG). Activity I.SB.223
11. Support provided on a National Meeting of Agricultural Librarians and Documentalists of Brazil (November 7-12, 1976, Brasilia, D.F.). Activity I.SB.224
12. Collaboration provided on holding the VIII AGRINTER Round Table (November 1976, Brasilia, D.F.). Activity I.SB.225
13. VIII Round Table on the Implementation and Coordination of AGRINTER (November 8-12, 1976, Brasilia, D.F.). Activity I.SB.315
7. Meetings of the ABEAS Technical Committees (June, August and October 1976, Rio de Janeiro and Piracicaba). Activity II.SB.221
8. Conducting Basic Studies for the Reformulation of Curricula (1 July 1976 through 30 June 1977, Rio de Janeiro). Activity II.SB.222
9. Support provided on Actions for the Integration of the Faculty of Veterinary Sciences and the Agricultural Areas within its Sphere of Influence (1 July 1976 through 30 June 1977, Pelotas, RGS). Activity II.SB.232
10. Scholarships for Postgraduate Studies in Veterinary Sciences (1 July 1976 through 30 June 1977, Pelotas, RGS). Activity II.SB.233
11. Support provided the Faculty of Veterinary Sciences on the Exchange of Professors (1 July 1976 through 30 June 1977, Pelotas, RGS). Activity II.SB.234
12. Courses on Production Systems and Systems Research Methodologies (July 1976). Activity II.SB.241
13. Advisory Services provided the Higher Agricultural Education Institutions on the Application of a Systems Approach to Education and Research (September 1976 to March 1977). Activity II.SB.242
14. Production and Distribution of Teaching Material about Systems (1 July 1976 through 30 June 1977, Rio de Janeiro). Activity II.SB.243
15. Research, Technical Assistance and Rural Extension Week in Parana State (October 18-21, 1976. Londrina, Pa.). Activity II.SB.
16. National Symposium on Rural Telepromotion (September 19-22, 1976, Pôrto Alegre, RGS). Activity II.SB.

Line II: Agricultural Education

1. Provision of Advisory Services to UCAP and the Higher Agricultural Education Institutions on the Implementation of Teaching Support Units (1 July 1976 through 30 June 1977). Activity II.SB.111
2. Courses for Professors on Collaborating with the Teaching Support Units (1 July 1976 through 30 June 1977). Activity II.SB.112
3. Training of Coordinators of the T.S. Units, by means of Courses and In-service Training (1 July 1976 through 30 June 1977). Activity II.SB.113
4. Participation in the Annual Meeting of ABEAS (October 25-28, 1976, Piracicaba, SP). Activity II.SB.121
5. Organization of a National Seminar of Rural Extension Professors (April 11-14, 1977, Belo Horizonte, MG). Activity II.SB.122
6. Participation in International Scientific Meetings of interest to CEPLAC (1 July 1976 through 30 June 1977, Itabuna, Ba.). Activity II.SB.129

17. Communications Meeting of Rural Worker Syndicate Directors (September 4-8, 1976, Curitiba, Pa.). Activity II.SB.

Line III: Agricultural Research

1. Advisory Services provided on the Organization of EMBRAPA's Planning System (1 July 1976 through 30 June 1977, Brasilia, D.F.). Activity III.SB.111
2. Advisory Services provided on the Implementation of a Diffusion and Technology Department (1 July 1976 through 30 June 1977, Brasilia, D.F.). Activity III.SB.112
3. Advisory Services provided on the Implementation of an Information and Documentation Department (1 July 1976 through 30 June 1977, Brasilia, D.F.). Activity III.SB.113
4. Advisory Services provided on the Implementation of a Technical-Scientific Structure (1 July 1976 through 30 June 1977, Brasilia, D.F.). Activity II.SB.114

5. **Advisory Services provided on the Organization of a Data Processing Department at EMBRAPA**
(1 July 1976 through 30 June 1977, Brasília, D.F.).
Activity III.SB.115
6. **Advisory Services provided on the Implementation of an EMBRAPA Human Resources Department**
(1 July 1976 through 30 June 1977, Brasília, D.F.).
Activity III.SB.116
7. **Provision of Advisory Services to EMBRAPA's President's Office**
(1 July 1976 through 30 June 1977, Brasília, D.F.).
Activity III.SB.117
8. **Strengthening Research in Cacao Plant Breeding and other Tropical Crops**
(1 July 1976 through 30 June 1977, Itabuna, Ba.).
Activity III.SB.122
9. **Provision of Advisory Services to the Cacao Research Center (CEPEC) on its Research Program in the Amazon Region**
(1 July 1976 through 30 June 1977). Activity III.SB.125
10. **Different Photoperiodic Effect on Growth and Flowering in Late Soy Bean Cultivars (*Glycine max* L. Merr)**
(July 1976 through February 1977, Pôrto Alegre, RGS).
Activity III.SB.
11. **Ampelographic Study of the Main Vid Cultivars grown in Rio Grande do Sul State**
(July 1976 through February 1977, Pôrto Alegre, RGS).
Activity III.SB.
12. **Selection of Soy bean Germplasm (*Glycine max* L. Merr) with a High Capacity for Symbiotic Fixation of Nitrogen and its Influence on Yields**
(July 1976 to February 1977, Pôrto Alegre, RGS).
Activity III.SB.
13. **Study of the Flowering Biology of the Main Vid Cultivars in Rio Grande do Sul State**
(July 1976 to February 1977, Pôrto Alegre, RGS).
Activity III.SB.
14. **Comparative Foliar Anatomy of Soy Bean Cultivars (*Glycine max* L. Merr) of different Origins**
(July 1976 to February 1977, Pôrto Alegre, RGS).
Activity III.SB.
15. **Morphological Study of Fruit Ripening of Different Cultivars of Grape growing in Rio Grande do Sul State**
(July 1976 to February 1977, Pôrto Alegre, RGS).
Activity III.SB.
16. **Principal Botanical Characteristics of the More Frequent Cultivars of Commercial Bean Groups (*Phaseolus vulgaris* L.)**
(July 1976 to February 1977, Pôrto Alegre, RGS).
Activity III.SB.
2. **Course on Irrigated Agriculture for Students from the Federal University of Paraiba**
(July 1976, São Gonçalo, PB). Activity IV.SB.212
3. **Course on Technical Assistance in Irrigated Agriculture (May 30 to June 22, 1977, Juazeiro, Ba.).** Activity II.SB.214
4. **In-service Training in Irrigated Agriculture (August 1976 to March 1977, Juazeiro, Ba.).** Activity IV.SB.216
5. **Course in Irrigated Agriculture for Students (July 5-30, 1976, Juazeiro, Ba.).** Activity IV.SB.216a.
6. **Preparation and Publication of Technical Manuals on Irrigated Agriculture (1 July 1976 through 30 June 1977, Juazeiro, Ba. and Rio de Janeiro).** Activity IV.SB.217
7. **VIII Course on Irrigation Engineering (Economic Section of Irrigation Projects) (July 6-16, 1976, Campina Grande, PB).** Activity IV.SB.219
8. **Collaboration on Improving Regular and Extension Course Plan in Irrigated Agriculture, at the FAMESF (January to June 1977, Juazeiro, Ba.).** Activity IV.SB.221
9. **Collaboration on an Inventory of Teaching Facilities at the FAMESF and a Proposal for their Upgrading to Meet the Needs of the New Course Plans (January to June 1977, Juazeiro, Ba.).** Activity IV.SB.222
10. **Support provided on a Study of the Current Situation and on a Training Program for the Teaching Staff at the FAMESF (January to June 1977, Juazeiro, Ba.).** Activity IV.SB.223
11. **Coordination of Efforts and Resources of SUDENE, CODEFASF and the Ministry of Education to Get Field Improvement Projects Underway, Upgrade the Teaching Facilities and Train Professors at the FAMESF (July 1976 through 30 June 1977, Juazeiro, Ba.).** Activity IV.SB.224
12. **In-service Training in Irrigated Cotton (December 24 1976 to June 4, 1977, Juazeiro, Ba.).** Activity IV.SB.225
13. **Administrative Organization of the Demonstration Irrigated Area (March 14 to June 30, 1977, Barreiras, Ba.).** Activity IV.SB.241
14. **Programming Production, Technical Assistance and Marketing for the Irrigated District of San Desiderio (March 14 to June 30, 1977, Barreiras, Ba.).** Activity IV.SB.242
15. **Organization and Implementation of a Cooperative Production and Marketing Enterprise for the Demonstration Irrigation District of San Desiderio (March 23 to June 30, 1977).** Activity IV.SB.243
16. **Formulation and Getting Underway of a Control, Supervision and Evaluation System for the Development of the San Desiderio District (1 April to 30 June 1977, Barreiras, Ba.).** Activity IV.SB.244

Line IV: Fostering Agricultural Production

1. **Collaboration provided SUDENE on Formulating a Training Program in Irrigated Agriculture for 1977, together with MINTER, DNOCS AND CODEVASF (1 July 1976 through 30 June 1977, Recife, Pe. and Rio de Janeiro).** Activity IV.SB.211

17. Definition and Details of an Operational Marketing Model for the Implementation of Agroindustries in the San Francisco Valley (1 December 1976 to 30 June 1977). Activity IV.SB.245
 18. Advisory Services provided on Programming Basic Studies for the Typification of Production Units, in Cooperation with the National Agricultural Planning System (1 July 1976 through 30 June 1977, Brasilia, D.F.). Activity IV.SB.312
 19. Advisory Services provided on the Definition of Action Methodologies at SIMBRATER, at the project level, oriented Towards Low Income Producers (July to September 1976, Brasilia, D.F.). Activity IV.SB.314
 20. Support provided on EMBRATER Participation in the Implementation of a National Rural Credit Policy (1 July 1976 through 30 June 1977, Brasilia, D.F.). Activity IV.SB.318
 21. Formulation of a Diagnostic Study of the National Agricultural Supply System of Brazil (1 July 1976 through 30 June 1977, Brasilia, D.F.). Activity IV.SB.411
 22. Cooperation provided COBAL to Evaluate Performance of the Supply System of Vegetable and Fruit Products in the Northeast of Brazil (September 1976 to January 1977, Brasilia, Pernambuco and Bahia). Activity IV.SB.412
 23. Cooperation provided COMCRED on the Implementation and Operation of a Rural Credit Programming Mechanism for the Country (October 30, 1976 to May 30, 1977, Brasilia, D.F.). Activity IV.SB.711
 24. Advisory Services provided COMCRED on the Definition and Development of Studies Undertaken during the 1976-1977 Period (September 1976 to May 1977, Brasilia, D.F.). Activity IV.SB.714
- Line V: Multinational Integration**
1. Course on Irrigated Agriculture for Students, at the Federal University of Paraiba (July 1-30, 1976, Areia, PB). Activity V.SB.
- Line VII: Administration of Agricultural Policy**
1. Advisory Services provided the Planning Office of SUPLAN on Methodological Aspects of the Formulation and Implementation of Integrated Development Projects for Low Income Farmers (1 July 1976 through 30 June 1977, Brasilia, D.F.). Activity VII.SB.111
 2. Advisory Services provided SUPLAN on the Formulation and Implementation of an Operational Model for the National Agricultural Planning System (1 July 1976 to 30 June 1977, Brasilia, D.F.). Activity VII.SB.112
 3. Advisory Services provided SUPLAN on the Implementation of Planning Units at Agencies linked to the Ministry, Integrated into an Operational Model of the Agricultural Planning System (1 July 1976 through 30 June 1977, Brasilia, D.F.). Activity VII.SB.113
4. Advisory Services provided the Ministry of Agriculture on Fostering the Reciprocal Exchange of Information on Agricultural Planning Aspects with other Countries of the Region (1 July 1976 through 30 June 1977, Brasilia, D.F.). Activity VII.SB.114
 5. Advisory Services provided on the Formulation of a Plan or Scheme to Implement the P-II-RS Project (1 July 1976 through 30 June 1977, Pôrto Alegre, RGS). Activity VII.SB.311
 6. Analysis and Description of Regional Agricultural Planning Methodology for the P-II-RS Project (1 July 1976 through 30 June 1977, Pôrto Alegre, RGS). Activity VII.SB.312
 7. Advisory Services provided on the Formulation and Application of Evaluation Schemes for the Annual Plan of Work (1 July 1976 through 30 June 1977, Pôrto Alegre, RGS). Activity VII.SB.313
 8. Provision of Advisory Services to CEPLAC on Planning Regional Development in the Cacao Region of Bahia (1 July 1976 through 30 June 1977, Itabuna, Ba). Activity VII.SB.321
 9. International Seminar on Strategies for the Regional Development of the American Tropics (September 27 to October 2, 1976, Belém, Pará). Activity VII.SB.421
 10. International Meeting on the Management of Conservation Units in the Amazon Region (November 8-14, 1976, Santarém, Pará). Activity VII.SB.422
 11. Cooperation provided the Ministry of Agriculture on its Organic Restructuring Program (31 January to February 4, 1977, Brasilia, D.F.). Activity VII.SB.
 12. Reciprocal Training in Animal Husbandry Planning (April 3-9, 1977). Activity VII.AC.114
 13. Course on the Preparation and Evaluation of Agricultural Development Projects at Florianopolis, Santa Catarina (July 20 to October 20, 1976, Florianopolis, SC). Activity VII.SZ.115

COLOMBIA

Line I: Analysis and Information for Rural Development

1. Compiling Basic Sectoral Data for the Year, and Preparing the Corresponding Summaries (1 July 1976 through 30 June 1977, Bogota). Activity I.AC.111
2. Perfecting the Country-level Action Plan for Colombia (1 July 1976 through 30 June 1977, Bogota). Activity I.AC.112
3. Provision of Advisory Services and Analysis of the Agricultural Documentation Services of Colombia (1 July 1976 through 30 June 1977, Bogota). Activity I.AC.211

4. National Course for Agricultural Librarians on the Administration of Agricultural Information Systems (May 9-18, 1977, Bogota). Activity I.AC.212
5. Library, Bibliographic and Documentation Services on Rural Development (1 July 1976 through 30 June 1977, Bogota). Activity I.AC.311
6. Bibliographic Services on Rural Development and Agrarian Reform (1 July 1976 through 30 June 1977, Bogota). Activity I.AC.312
7. Basic Training in Automated Library and Documentation Services (1 July 1976 through 30 June 1977, Bogota). Activity I.AC.313
8. Participation in the Regional Working Seminar on the Registration of Information on the Environment Sources (November 15-19, 1976, Bogota). Activity I.AC.
9. Reciprocal Training in The Operation of Agricultural Information Agencies (November 28 to December 5, 1976). Activity I.AV.214
9. Support provided on Agricultural Extension Course (September 14-24, 1976, Blonay, Chinacola and Norte de Santander). Activity II.AC.244
10. First Course in Communications and Extension (November 15-26, 1976, Bogota). Activity II.AC.245
11. Support provided the Instructors of the Agrarian Bank (February 21-25, 1977, Bogota). Activity II.AC.247
12. Course in Education Psychology (March 14-18, 1977, Chinchiná and Caldas). Activity II.AC.248
13. First Course in Educational Psychology (March 28 to April 1, 1977, Chinchiná and Caldas). Activity II.AC.249
14. Second Course in Educational Psychology (April 4,5,6,11 and 12, 1977, Chinchiná and Caldas). Activity II.AC.2410
15. Advisory Services provided on the Postgraduate Programs. III Special Meeting of ALEAP (May 5-7, 1977, Cali). Activity II.NM.212

Line II: Agricultural Education

1. Provision of Advisory Services to ICFES on the Organization of a Technical Department for Higher Agricultural Education Planning in Colombia (1 July 1976 through 30 June 1977, Bogota). Activity II.AC.211
2. Provision of Advisory Services to the ICFES Technical Group on Content with respect to the Planning and Economics of Higher Agricultural Education as related to the Agro-economic and Social Development of Colombia (April 25-27, 1977, Bogota). Activity II.AC.212
3. Support provided ICFES on carrying out Research Studies aimed at Determining the Degree of Importance of the Different Roles in Veterinary Sciences (1 July 1976 through 30 June 1977, Manizales). Activity II.AC.213
4. Support provided ICFES on Training an Interdisciplinary team on Educational Technology Content in Higher Agricultural Education (February 7-19, 1977, Bogota). Activity II.AC.214
5. Two Courses on Rural Development and "Campesino" Organization for Technicians from the National Training Service (SENA) (April to June 1977, Bogota and Buga). Activity II.AC.215
6. Short Course on Rural Development and "Campesino" Organization for SENA functionaries (June 20-24, 1977, Bogota). Activity II.AC.216
7. Two Training Workshops on the Formation of "Campesino" Training Units in INCORA (November 1976 and May 1977, Bogota and Barranquilla). Activity II.AC.221
8. Course on Communication Techniques in Vocational Education (July 1-10, 1976, Libano, Tolima). Activity II.AC.241

Line III: Agricultural Research

1. Support provided on Research Studies concerning Production Systems in Use in a Traditional Agriculture Region (July 1976 through February 1977, Bogota and Pasto). Activity III.AC.111
2. Meeting to Analyze the Information on Production Systems in Use in a Traditional Agriculture Region (1 February and 30 June 1977, Pasto). Activity III.AC.112
3. Workshop on Research Priorities on Production Systems in a Traditional Agriculture Region (3 June 1977, Pasto, Nariño). Activity III.AC.113

Line IV. Fostering Agricultural Production

1. Evaluation of Caquetá Project No. 1 (January through June 1977, Florencia and Bogota). Activity IV.AC.113
2. First Course on Marketing Agricultural Products (July 26-30 and November 22 to December 3, 1976, Bogota). Activity IV.AC.421
3. Second Course on Agricultural Marketing (August 16-27, 1976, Medellín). Activity IV.AC.422
4. Support provided on a Course on the Storage and Conservation of Grains and Materials (September 20 to October 29, 1976, Bogota). Activity IV.AC.426
5. Course on the Control and Conservation of Grain (October 4 to December 17, 1976, Bogota). Activity IV.AC.427
6. Course on Agricultural Marketing (November 15-24, 1976, Bogota). Activity IV.AC.428
7. Third Course on Marketing Agricultural Products (December 6-15, 1976, Bogota). Activity IV.AC.429

8. Course for Laboratory Purchasers (March 7 to April 6, Bogota). Activity IV.AC.4211
9. Course on the Management and Conservation of Grain (April 11-29, 1977, Bogota). Activity IV.AC.4212
10. Course on Agricultural Marketing for SENA Functionaries (May 9-20, 1977, Pasto). Activity IV.AC.4215
11. Course on Price Information (May 30 to June 3, 1977, Bogota). Activity IV.AC.4216
12. Support provided on Research on Animal Production Systems in Traditional Areas (July 1976 through February 1977, Bogota and Pasto). Activity IV.AC.511
13. Seminar on Integral Animal Production Systems in Traditional Agriculture Areas (May 30 to June 1, 1977, Pasto, Nariño). Activity IV.AC.512
14. Course on the Communication of Integral Production Systems Technologies (June 2-4, 1977, Pasto, Nariño). Activity IV.AC.513
15. Cooperation on the Establishment of Integral Production Systems on Farms in Traditional Agriculture Areas (1 July 1976 through 30 June 1977). Activity IV.AC.514
16. Support provided the Faculty of Zootechnics at the University of Nariño, in Planning Animal Husbandry Research (1 June 1977, Pasto, Nariño). Activity IV.AC.515
17. Collaboration provided FONAIAP and the Animal Husbandry Development Head Office on the Preparation of a Development Program (April 1977, Bogota and Villavicencio). Activity IV.AV.511

Line VI: Fostering and Implementing Structural Change

1. Support provided on the Formulation of a Methodology for the Yearly Analysis of FAP (Associative Forms of Production) in Colombia (July 1976 through March 1977, Bogota). Activity VI.AC.111
2. Support provided on the Analysis of Results of 38 Studies of Community Enterprises in Colombia (March through June 1977). Activity VI.AC.112
3. Support provided INCORA on the Preparation of a Methodology for Training "Campesino" members of FAP, in Business, Social and Technical Training Aspects (May 9-14, 1977, Bogota). Activity VI.AC.113
4. Collaboration provided CENCIRA on a Study to Identify the Principal Problems in "Campesino" Participation in the Management and Administration of their Enterprises (May 1977, Bogota). Activity VI.AP.312
5. Participated with CENCIRA on the Elaboration of Research and Training Methods and Techniques (May 9-14, 1977, Bogota). Activity VI.AP.312

6. In-service Training in Rural Cadastral Surveying and Farm Appraisals (August 1976, Bogota). Activity VI.AV.113
7. Elaboration of a Methodology to Evaluate the Efficiency of Rural Development Strategies (1 July 1976 through 30 June 1977, Bogota). Activity VI.AZ.311

Line VII: Administration of Agricultural Policy

1. Analysis of Esman Linkages at OPSA, with Emphasis on the Animal Husbandry Programming Unit (August 1976 through June 1977, Bogota). Activity VII.AC.111
2. Technical Support provided OPSA on the Design of an Animal Husbandry Planning System for Colombia (July 1976 through January 1977, Bogota). Activity VII.AC.112
3. Technical Support provided OPSA on a Methodology for the Consolidation of a Diagnostic Study of Animal Husbandry in Colombia (1 July 1976 through 30 June 1977, Bogota). Activity VII.AC.113
4. Course on the Preparation and Evaluation of Agricultural Projects (IICA/IDB Convention) (21 February to 6 May 1977, Bogota). Activity VII.AC.116
5. Course on the Preparation and Evaluation of Agricultural and Agroindustrial Projects (30 August to 29 October 1976, Bogota). Activity VII.AC.121
6. First Course on Livestock Farm Administration (July 5-10, 1976, Cali). Activity VII.AC.211
7. Course on the Administration of Cooperatives (Associative Forms of Production and Marketing) (February 14-22, 1977, Bogota). Activity VII.AC.214
8. Second Course on Livestock Farm Administration (July 12-17, 1976, Bogota). Activity VII.AC.215
9. Fourth Course on Livestock Farm Administration (September 20-25, 1976, Bucaramanga). Activity VII.AC.216
10. Fifth Course on Livestock Farm Administration (October 25-30, 1976, Barranquilla). Activity VII.AC.218
11. Sixth Course on Livestock Farm Administration (31 January to 4 February 1977, Cali). Activity VII.AC.2110
12. Support provided on a Course for Administrators of Whole Sale Dispensaries (Bogota). Activity VII.AC.2111

COSTA RICA

Line I: Analysis and Information for Rural Development

1. Collaboration with the National Coordination Committee on Agricultural Information of Costa Rica (1 July 1976 through 30 June 1977, San José). Activity LNCR.411

2. Provision of Advisory Services to the Units which Produce, Process and Use Socio-economic Information, to Up-grade their Performance and their Linkages with National and Regional Systems (1 July 1976 through 30 June 1977). Activity I.NCR.413
3. Fostering Interest in and Provision of Advisory Services on Market and Crop Prediction Information Networks and their Linkage with National Networks (1 July 1976 through 30 June 1977). Activity I.NCR.414
4. Establishment of a System of Interviewing, using the Sampling Frame (September 1976 through June 1977, San José). Activity I.NCR.416
5. Project of a Documentation Center for the Planning Office of Costa Rica (March through June 1977, San Jose). Activity L.NCR.
6. Training in AGRINTER Methodologies and Operation (November 15 to December 4, 1976, Turrialba and San Jose). Activity I.AV.212
7. Inventory of Institutional Resources in Agricultural Documentation and Information in Latin America and the Caribbean (1 July 1976 through 30 June 1977, San Jose). Activity I.D.311
8. Fostering the Use of Strategies for the Establishment and Development of National Information Sub-systems (July 1976, San Jose). Activity I.D.313
9. Organization and Coordination of Input/Output Operations for AGRINTER and AGRIS/Latin America and the Caribbean (1 July 1976 through 30 June 1977, San Jose). Activity I.D.314
10. Formulation of Project to be Financed by IDRC of Canada (June 1977, San Jose). Activity I.D.318
11. Revision and Publication of Directives on the Selection of Documents (July through September 1976, San Jose). Activity I.D.321
12. Revision and Up-dating of the "Manual on the Bibliographic Description of Documents" (1 July 1976 through of the Subject Categories and San Jose). Activity I.D.322
13. Revision and Up-dating of the Subject Categories Scheme for AGRIS/AGRINTER (1 July 1976 through 30 June 1977, San Jose). Activity I.D.324
14. Identification, Retrieval and Registration of Documents (1 July 1976 through 30 June 1977, San Jose). Activity I.D.331
15. Selection, Categorization, Translation and Enrichment of Document Titles (1 July 1976 through 30 June 1977, San Jose). Activity I.D.332
16. Descriptive Processing of Documents (1 July 1976 through 30 June 1977, Turrialba and San Jose). Activity I.D.333
17. Automated Document Processing (1 July 1976 through 30 June 1977, San Jose). Activity I.D.334
18. Supervision of Key Perforating and Production Processing for AGRINTER/AGRIS (May 1977, San Jose). Activity I.D.335
19. Publication of the Latin American and Caribbean Agricultural Index (1 July 1976 through 30 June 1977, San Jose). Activity I.D.341
20. Guide for the Utilization of the Agricultural Index for Latin America and the Caribbean (May through June 1977, San Jose). Activity I.D.342
21. Elaboration and Publication of "IICA's Contributions to Literature in the Agricultural Sciences" (1 July 1976 through 30 June 1977, Turrialba). Activity I.D.343
22. Implementation and Coordination of the Agricultural Bibliography Bank for Latin America and the Caribbean (1 July 1976 through 30 June 1977, Turrialba). Activity I.D.345
23. Elaboration of a Periodic Publications Catalog (July 1976 through April 1977, San Jose). Activity I.D.346
24. Production and Provision of Specialized Bibliographies (1 July 1976 through 30 June 1977, Turrialba). Activity I.D.347
25. Dissemination of Documents through Reproduction Systems (1 July 1976 through 30 June 1977, Turrialba). Activity I.D.348
26. Feasibility Study on the Implementation of a Microfiche Service (1 January through 30 June 1977, San Jose). Activity I.D.3410
27. Feasibility Study for the Exploitation of Data Bases for the Selective Information Dissemination Service (1 July 1976 through 30 June 1977, San Jose). Activity I.D.3411
28. Elaboration and Publication of a Bibliography on the Coffee Rust Disease (March through June 1977, Turrialba). Activity I.D.3412
29. Publication of the Bulletin "Development of the American Tropics" (1 July 1976 through 30 June 1977, Turrialba). Activity I.D.351
30. Compiling and Publishing Bibliographies of Interest on the Tropics (1 July 1976 through 30 June 1977; Turrialba). Activity I.D.352
31. Preparation and Dissemination of the Alert Services "Up-to-date Information" in Agronomy, Forestry and Animal Husbandry (1 July 1976 through 30 June 1977, Turrialba). Activity I.D.353

32. Refresher Courses for Librarians, Documentalists and Agricultural Information Specialists (1 July 1976 through 30 June 1977, Turrialba and San Jose). Activity I.D.361
33. Course on the Utilization of Agricultural Documentation and Information (August 19 to September 6, 1976, Turrialba). Activity I.D.362
34. Support provided the Inter-American Association of Agricultural Librarians and Documentalists - AIBDA (1 July 1976 through 30 June 1977, San Jose). Activity I.D.363
35. Support provided the International Association of Agricultural Librarians and Documentalists - IAALD (1 July 1976 through 30 June 1977, San Jose). Activity I.D.364
36. Elaboration of a Project for a Program of Continuous Education in the Development of Agricultural Information Systems, to be submitted for consideration to the OAS (April through June 1977, San Jose). Activity I.D.365
37. Selection and Acquisition of Documents for the Library (1 July 1976 through 30 June 1977, Turrialba). Activity I.D.371
38. Technical Processing and Storage of Documents for Libraries (1 July 1976 through 30 June 1977, Turrialba). Activity I.D.372
39. Circulation and Loan of Documents (1 July 1976 through 30 June 1977, Turrialba). Activity I.D.373
40. Integration and Standardization of Subject Headings for Agricultural Libraries (1 July 1976 through 30 June 1977, Turrialba). Activity I.D.374
41. Establishment of a Library on Rural Planning and Development at IICA Headquarters (June 1977, San Jose). Activity I.D.375
42. Publication of "Documentation and Information for Agricultural Development" (1 July 1976 through 30 June 1977, San Jose). Activity I.D.381
43. Elaboration and Publication of a Poster entitled "Agricultural Index for Latin America and the Caribbean" (May 1977, San Jose). Activity I.D.384
44. Compiling Informatin and Providing Data and Statistics of CIDIA Activities for the Series "Country Services" (October 4 to November 29, 1976, San Jose). Activity I.D.385
45. Elaboration of a Promotional Brochure about the "Agricultural Index for Latin America and the Caribbean" (May 1977, San Jose). Activity I.D.386
46. XX International Course on Documentation: AGRINTER and AGRIS Systems Methodologies (March 1977, San Jose). Activity I.D.417

47. XXI International Course on Agricultural Documentation: Administration of Agricultural Information Systems (May 1977, San Jose). Activity I.D.418
48. Regional Workshop on Methodologies and Analysis of Basic Information (June 20 to July 1, 1977, San Jose). Activity I.D.420

Line II: Agricultural Education

1. Provision of Advisory Services in Teaching, Research and Extension at the Agricultural Economics School, Faculty of Agronomy, University of Costa Rica (1 July 1976 through 30 June 1977, San Jose). Activity II.NCR.221
2. Provision of Support on Activities of National and International Projection at the School of Agricultural Economics, Faculty of Agronomy, University of Costa Rica. (1 July 1976 through 30 June 1977, San Jose). Activity II.NCR.222
3. In-Service Training for Two Functionaries of the Planning Office of the Faculty of Agricultural Engineering and Veterinary Medicine, Ecuador, on Administrative Organization and Planning Flow (April 9-21, 1977, Heredia). Activity II.AE.112
4. Provision of Advisory Services to SIJR on the Elaboration of a Policy Document, Coherent with the IICA-FAO Conceptual Framework, including a Planning Guide and a Training Program (August through September 1976, San Jose). Activity II.NZ.211
5. Provision of Advisory Services to Sectoral Agencies directing Rural Youth Programs, on the Elaboration of a Planning Guide and a Short-term Work Program (October 1976, San Jose). Activity II.NZ.212

Line III: Agricultural Research

1. Training in Production Systems (January 17 to February 8, 1977, Turrialba). Activity III.AE.113

Line IV: Fostering Agricultural Production

1. National Course on the Conservation and Management of Land and Water (April 18-30, 1977, Cañas, Guanacaste). Activity IV.NCR.211
2. Provision of Advisory Services on the Development of Projects related with Research and Technical Assistance in Pulses (1 July 1976 through 30 June 1977, San Jose). Activity IV.NCR.311
3. Provision of Advisory Services and Training in Marketing Aspects, to the National Production Council (CNP) (1 July 1976 through 30 June 1977, San Jose). Activity IV.NCR.411
4. Technical Cooperation provided on Marketing for Small Farmers and their Organizations (1 July 1976 through 30 June 1977, San Jose). Activity IV.NCR.412

5. Cooperation provided the Ministry of Agriculture and Animal Husbandry (MAG) on the Preparation of a Manual for Inspecting Coffee Plantations (March through June 1977, San Jose). Activity IV.NCR.611
6. Advisory Services provided the Publications Program of MAG and the Coffee Office (San Jose). Activity IV.NCR.612
7. Course on the Administration of Agricultural Enterprises for Functionaries from the Lands and Colonization Institute (ITCO) and Students from the Faculty of Agronomy of the University of Costa Rica (November 1-19, 1976, San Jose). Activity IV.NCR
8. Training in Marketing Information Methodologies and Analysis (June 20-30, 1977, San Jose). Activity IV.LD.110
9. Participation and Support provided the Latin American Seminar on Marketing Strategies for Rural Development, organized by IICA's Marketing Unit (April 1977, San Jose). Activity IV.NZ.912

Line VII: Administration of Agricultural Policy

1. Institutional Analysis of the Public Agricultural Sector (1 July 1976 through 30 June 1977, San Jose). Activity VII.NCR.211
2. Elaboration of the 1976-1977 Operative Program with several Units from Headquarters (July 1976, San Jose). Activity VII.P.511
3. Revision and Consolidation of the 1976-77 Operative Program of all IICA's Units, as per Recommendations made at the June Programming Meetings, for Definitive Approval by the Director General (July 1976, San Jose). Activity VII.P.512
4. Consolidation and Preparation of a Publication of the 1976-77 Operative Program Synthesis (July 1976, San Jose). Activity VII.P.513
5. Advisory Services provided Institute Units on the Elaboration of their Draft Projects for the 1977-78 Program-Budget at the Project Level (August 1976, San Jose). Activity VII.P.514
6. Elaboration of Proposals for the 1977-78 Program Budget for Headquarters Units (August 1976, San Jose). Activity VII.P.515
7. Elaboration of Instructions for the Presentation of the 1977-78 Operative Program, at Different Programming Levels, for Approval by the Director General (September 1976, San Jose). Activity VII.P.516
8. Revision of Program and Project Descriptions for the 1977-78 Program Budget, Up-dating them in Line with the New Lines of Action - together with the Respective Line Coordinators (September 1976, San Jose). Activity VII.P.517
9. Analysis of Budget Aspects of Proposals Received from Units, and Adjusting them in Line with Instructions received from the Director General (September 1976, San Jose). Activity VII.P.518
10. Analysis of the Draft Five-year Plan and Elaboration of the corresponding Program and Budget Projections (September 1976, San Jose). Activity VII.P.519
11. Elaboration of a Draft Program-Budget for 1977-78 to be presented to the Special Committee of the Board of Directors, and to the Council of Directors (October 1976, San Jose). Activity VII.P.5110
12. Elaboration of the Draft Five-year Plan in Program and Budgetary Aspects (October 1976, San Jose). Activity VII.P.5111
13. Participation in the Analysis of the 1977-78 Draft Program-Budget and the Five-year Plan, with the Special Committee of the Board of Directors (October 1976, San Jose). Activity VII.P.5112
14. Participation in the Analysis of the 1977-78 Draft Program-Budget and the Five-year Plan, with the Council of Directors
15. Revision of the 1977-78 Draft Program-Budget in Line with Recommendations received from the Special Committee of the Board of Directors and the Council of Directors, and as per Decisions taken by the Director General; Communication of this Information to the Directors of IICA Units (November 1976, San Jose). Activity VII.P.5114
16. Consolidation of IICA Unit Proposals, in Program and Budgetary Aspects, to be included into the 1977-78 Operative Program (December 1976 to January 1977, San Jose). Activity VII.P.5116
17. Design and Publication of the Proposed Program-Budget for 1977-1978 (December 1976 through January 1977, San Jose). Activity VII.P.5117
18. Consolidation of Recommendations made at Country-level Programming Meetings (April 1977, San Jose). Activity VII.P.5122
19. Adjustments made as needed to the 1977-78 Program-Budget, as per Decisions taken by the Board of Directors and the Director General (May 1977, San Jose). Activity VII.P.4124
20. Analysis of Modification Proposals for the 1976-77 Operative Program, and Request for Transfers in Budgetary Accounts, by IICA Units, in Consultation with the respective Line Coordinators (1 July 1976 through 30 June 1977, San Jose). Activity VII.P.5127
21. Analysis of the Allocation of Quota and Other Source Budget Resources, and their Structure and Balance between Objects of Expenditure, Lines, Zones, Programs, Countries and Projects, to Assure their being in Line with IICA Policy (1 July 1976 through 30 June 1977, San Jose). Activity VII.P.5128
22. Elaboration of Criteria for the Allocation of Budget Resources, for Approval by the Director General (1 July 1976 through 30 June 1977, San Jose). Activity VII.P.5129
23. Up-dating the Registry of Current Agreements of IICA with National and International Agencies (1 July 1976 through 30 June 1977, San Jose). Activity VII.P.5130

24. Internal Evaluation: The Design of an "ex-ante" System of Analysis for Programs, Projects and Activities, and the Organization of a System for Registry, Control and Filing of Evaluation Reports (1 July 1976 through 30 June 1977, San Jose). Activity VII.P.521
25. Coordination of IICA Actions on the Analysis and Information for Rural Development Purposes (1 July 1976 through 30 June 1977, San Jose). Activity VII.P.531
26. Coordination of IICA Actions in Agricultural Education (1 July 1976 through 30 June 1977, San Jose). Activity VII.P.532
27. Coordination of IICA Actions in Agricultural Research (1 July 1976 through 30 June 1977, San Jose). Activity VII.P.533
28. Coordination of IICA Actions to Foster Agricultural Production (1 July 1976 through 30 June 1977, San Jose). Activity VII.P.534
29. Coordination of IICA Actions to Foster and Implement Structural Change (1 July 1976 through 30 June 1977, San Jose). Activity VII.P.535
30. Coordination of IICA Actions in the Administration of Agricultural Policy (1 July 1976 through 30 June 1977, San Jose). Activity VII.P.536
31. Elaboration of IICA's Five-year Plan (July through October 1976, San Jose). Activity VII.P.541
32. Perfecting Methodologies for Institutional Diagnostic Studies and the Elaboration and Up-dating of Country-level Action Plans (1 July 1976 through 30 June 1977, San Jose). Activity VII.P.542
33. Revision of the Methodologies for Prospective Studies (1 July 1976 through 30 June 1977, San Jose). Activity VII.P.543

CHILE

Line I: Analysis and Information for Rural Development

1. Analysis of the Rural and Institutional Development in Chile (1 July 1976 through 30 June 1977, Santiago). Activity I.SC.111
2. Revision of IICA's Action Plan in Chile (1 July 1976 through 30 June 1977, Santiago). Activity I.SC.112
3. Annual Programming Meeting of the Regional Office for the Southern Zone of IICA (1 July 1976 through 30 June 1977, Santiago). Activity I.SC.113
4. Provision of Advisory Services to the National Science and Technology Research Committee of Chile (CONICYT) on the Development of a Sectoral Sub-system (1 July 1976 through 30 June 1977, Santiago). Activity I.SC.211

5. Course on Perfecting Agricultural and Forestry Information, for Librarians from the Sub-system Units, emphasizing their Integration to the Regional AGRINTER System (July 1976 through January 1977, Santiago). Activity I.SC.212
6. Provision of Advisory Services to the Communication and Information Units, on Training their Personnel in Technical and Formal Writing Techniques (June 1977, Santiago). Activity I.SC.213

Line II: Agricultural Education

1. Collaboration on the Organization and Getting Underway of a Diagnostic Study by CAF (Agricultural and Forestry Committee) of the Agricultural Education Sub-system in Chile (1 July 1976 through 30 June 1977). Activity II.SC.111
2. Support provided on the Functioning of the Agricultural and Forestry Committee of the Council of Rectors (1 July 1976 through 30 June 1977). Activity II.SC.112
3. Strengthening the Technical and Middle levels of the Agricultural Education Sub-system in Chile (22 July 1976 through 30 June 1977). Activity II.SC.113
4. Provision of Advisory Services on the Establishment of Bilateral Agreements in the Area of Agricultural Education, with Other Countries (January through June, 1977, Santiago, Asunción and Mendoza). Activity II.SC.114
5. Fostering the Intensification of Relations between the Agricultural Education Sub-system and the Rural Milieu (April 26-28, 1977, Santiago). Activity II.SC.115
6. Provision of Advisory Services on the Coordination of the Permanent Postgraduate Program for the Definitive Transfer of Responsibility for Organization and Operational Purposes, to the Corresponding National Agencies (1 July 1976 through 30 June 1977). Activity II.SC.211
7. Contribution to the Consolidation and Perfection of Postgraduate Courses (1 July 1976 through 30 June 1977). Activity II.SC.212
8. Provision of Advisory Services on the Evaluation of Postgraduate Courses (1 July 1976 through 30 June 1977). Activity II.SC.214
9. Collaboration provided the Permanent Graduate Program in Agricultural Sciences and Forestry - Postgraduate Course in the Management of Soil and Waters (30 September to 11 December 1976). Activity II.SC.
10. IICA Participation in Agreement for Cooperation and Exchanges between Universities and Research Centers (1 July 1976 through 30 June 1977, Jaboticabal, Santiago). Activity II.SB.244
11. Academic Up-grading of the Professors at the Faculty of Veterinary Sciences (1 May to 30 June 1977). Activity II.SP.216

Line III: Agricultural Research

1. Support provided on the Analysis of Production Systems at the Farm Level (1 July 1976 through 30 June 1977, Quilamapu, Digua and Quillota). Activity III.SC.111

2. Analysis of Technological Production Systems (1 July 1976 through 30 June 1977, Quilamapu, Temuco and Digua). Activity III.SC.112
3. Technical Meeting on the Wheat Louse (November 23-26, 1976, Santiago). Activity III.SZ.211

Line IV: Fostering Agricultural Production

1. Support and Advisory Services provided the Executive Secretariat of the National Irrigation Committee on the Organization and Structuring of Districts for the Conservation, Management and Development of Lands and Water (July 1976 through 30 June 1977, Santiago). Activity IV.SC.211
2. High-level Course on the Design and Construction of Drainage Systems (28 January to 4 March 1977, Santiago). Activity IV.SC.212
3. Training Cycle for Middle-level Technical Personnel from the Land and Water Conservation and Management Districts (28 September 1976 to 12 March 1977, Parral, Linares). Activity IV.SC.213
4. Collaboration on the Postgraduate Course on Soil and Water Management at the Catholic University of Chile (September through December 1976, Santiago, Parral). Activity IV.SC.214
5. Continued Technical Collaboration and Support provided on the Development and Consolidation of the Digua Pilot District (1 June 1976 through 12 March 1977, Digua, Parral). Activity IV.SC.222
6. Support provided the Irrigation Office of the Ministry of Public Works on the Transfer to Irrigation Water Users, of the Responsibility for Operating and Maintaining Secondary and Tertiary Irrigation Works in the Digua District (Digua, Parral). Activity IV.SC.223
7. Support provided on Activities of the Committee in Charge of Legislation on The Conservation of Natural Renewable Resources and Environment (1 July 1976 through 30 June 1977, Villarica). Activity IV.SC.231
8. Compiling and Analysis of Background Information (1 July 1976 through 30 June 1977, Santiago). Activity IV.SC.241
9. Series of Talks on Watershed Management (April 25-28, 1977, Santiago). Activity IV.SC.246
10. Regional Seminar on the Conservation and Management of Watersheds (Activity IV.SZ.212)

LINE VI: Fostering and Implementing Structural Change

1. Provision of Advisory Services to National Rural Development Agencies (1 July 1976 through 30 June 1977, Santiago and Digua). Activity VI.SC.111

Line VII: Administration of Agricultural Policy

1. Elaboration of a Methodology for Agricultural Regionalization and Personnel Training (1 July 1976 through 30 June 1977). Activity VII.SC.111

DOMINICAN REPUBLIC

Line I: Analysis and Information for Rural Development

1. Compiling and Analyzing Information to Up-date Data on Trends in the Agricultural Sector (1 July 1976 through 30 June 1977, Santo Domingo). Activity LLD.111
2. Up-dating the Dominican Republic Country-level Action Plan (1 July 1976 through 30 June 1977, Santo Domingo). Activity LLD.112
3. Formulation of a Feasibility Project for the Creation of a Documentation Center for the Agricultural Sector of the Dominican Republic (1 July 1976 through 30 June 1977, Santo Domingo). Activity LLD.212
4. Participation in the Annual Programming Meeting of the Regional Office (June 11-17, 1977, Santo Domingo). Activity L.LH.113

Line II: Agricultural Education

1. Diagnostic Study of the Rural Educational Sub-system in the Dominican Republic (March through June 1977, Santo Domingo). Activity IL.LD.111

Line IV: Fostering Agricultural Production

1. Collaboration on the Diagnostic Study of the Agricultural Marketing System in the Dominican Republic and the Preparation of a National Marketing Plan (1 July 1976 through 30 June 1977, Santo Domingo). Activity IV.LD.411
2. Participation in the Organization of Courses and Training Seminars in Agricultural Marketing (July 1976 through February 1977). Activity IV.LD.412
3. Provision of Advisory Services on Strengthening the System to Compile and Disseminate Marketing Information (Activity IV.LD.413)
4. Technical Cooperation provided INESPRES on the Organization and Implementation of Specific Studies or Projects (1 July 1976 through 30 June 1977, Santo Domingo). Activity IV.LD.414
5. Collaboration provided SEA and INESPRES on the Preparation of a "Rural Marketing Services" Project (July 1976 through April 1977, Santo Domingo). Activity IV.LD.415
6. Fostering the Integration of the Divisions at the Agricultural Economics Department and Strengthening the Planning Functions of this Department, in Coordination with the Planning Undersecretariat (1 July 1976 through 30 June 1977, Santo Domingo). Activity IV.LD.417

7. Technical Cooperation provided the Coffee and Cacao Department of the State Secretariat of Agriculture (February through March 1977, Santo Domingo). Activity IV.LD.418
8. Technical Cooperation provided the Production and Marketing Undersecretariat of SEA on Marketing Coffee (December 1976 through January 1977, Santo Domingo). Activity IV.LD.419
9. Training in Marketing Information Methodology and Analysis (Santo Domingo). Activity IV.LD.4110
10. Diagnostic Study of the Post-harvest problems in the Dominican Republic (1 July 1976 through 30 June 1977, Santo Domingo). Activity IV.LZ.911
11. Collaboration provided the Marketing Program of the Dominican Republic on the Identification of Projects to Reduce Post-harvest Losses in Potatoes and Tomatoes (May 1977). Activity IV.NZ.913

Line VI: Fostering and Implementing Structural Change

1. Case Studies to Determine a Typology of "Campesino" Organizations in the Dominican Republic (Santo Domingo). Activity VI.LD.211
2. Workshop on the Role of "Campesino" Organizations in Development Projects (March 28 to April 1, 1977, Villa Mella). Activity VI.LD.212

Line VII: Administration of Agricultural Policy

1. Support provided on Fostering and Financing the IICA/SEA Integrated Planning Project (1 July 1976 through 30 June 1977, Santo Domingo). Activity VII.LD.111
2. Institutional Diagnosis of the State Undersecretariat of Research, Extension and Training (SEIECA) (1 July 1976 through 30 June 1977, Santo Domingo). Activity VII.LD.211
3. Collaboration provided on the Formulation of a Project for the Organization of SEIECA (1 July 1976 through 30 June 1977, Santo Domingo). Activity VII.LD.212
4. Cooperation provided on the Formulation of an Integrated Planning System for SEIECA (October 1976, Santo Domingo). Activity VII.LD.213
5. Collaboration provided the Director General on the Presentation of the Proposed Program-Budget for 1977-1978 to the Special Committee and the Board of Directors (May 1977, Santo Domingo). Activity VII.P.5123

ECUADOR

Line I: Analysis and Information for Rural Development

1. Compiling and Analysis of Information and the Elaboration of a Diagnostic Study (August 1976 through June 1977, Quito). Activity I.AE.111

2. Provision of Help on the Creation and Establishment of an Agricultural Information Sub-system in Ecuador (September 6-10, 1976, Quito). Activity I.AE.211
3. Meeting of the Sub-system Agencies to Approve the National Information System Project, and to Identify the Central Agency (February 9-11, 1977, Quito). Activity I.AE.212
4. Support provided the Central Agency on Obtaining Legal Sanction for a National Information System (April 6 to June 3, 1977, Quito). Activity I.AE.213

Line II: Agricultural Education

1. Workshop on the Organization of a Planning Unit for the Faculty of Agriculture and Veterinary Medicine (FIAMV) at the Central University of Ecuador (October through November 1976, Quito). Activity II.AE.111
2. Advisory Services provided the Planning Office of the FIAMV on the Structure, Functions and Linkages of a Planning System (June 6-10, 1977, Riobamba). Activity II.AE.113
3. Cooperation provided for the Latin American Seminar on Postgraduate Rural Development Programs (May 9 to June 23, 1977, Quito). Activity II.AE.114

Line III: Agricultural Research

1. Planning the National Coffee Research Program (August 4-17, 1976, Quito). Activity III.AE.111
2. Analysis of Production Systems for Ecuador (October 18 to November 23, 1976, Quito). Activity III.AE.112

Line IV: Fostering Agricultural Production

1. Strengthening Planning Agencies and Defining National-level Marketing Policies (1 July 1976 through 30 June 1977). Activity IV.AE.411
2. Technical Cooperation provided the Rural Development Office on the Organization of Medium-sized and Small Farmers (1 July 1976 through 30 June 1977). Activity IV.AE.413

Line VI: Fostering and Implementing Structural Change

1. Workshop on the Elaboration and Application of Area Plan Methodologies (May 23 to June 30, 1977, Quito and Riobamba). Activity VI.AE.111
2. Provision of Advisory Services on the Elaboration of a Methodology to Evaluate the Productive Efficiency and Other Aspects of Expropriation, as per the Ecuadorian Agrarian Reform Law (January 10-15, 1977, Quito). Activity VI.AE.112

Line VII: Administration of Agricultural Policy

1. Training on the Preparation of Agricultural Projects (PEPA Courses) (March through May 1977, Quito). Activity VII.AE.112

2. Analysis of the Sectoral Planning System (November 1976 through June 1977). Activity VII.AE.113
3. Inventory of Ex-participants in PEPA Courses in Ecuador (April to May 1977, Quito, Guayaquil, Cuenca). Activity VII.AE.115
4. Working Meeting on the Identification of Problems in the Sub-system comprised of Development Offices of the Ministry of Agriculture and Livestock (MAG) (August 16-20 and October 11-16, 1976, Quito). Activity VII.AE.211
5. Working Meeting on the Formulation of a Scheme for the Organization, Functions and Procedures of a Sub-system of Development Offices of the Ministry (MAG) (February to June 1977, Quito). Activity VII.AE.212
6. Diagnostic Study of the Present Situation of the Sub-system comprised of Agencies working in Uninhabited Tropical Areas (March through June 1977, Quito). Activity VII.AE.411

EL SALVADOR

Line I: Analysis and Information for Rural Development

1. Up-dating and Analysis of Basic Information and Special Studies (April through May 1977). Activity I.NS.111
2. Up-dating the Country-level Action Plan (February through March 1977). Activity I.NS.112
3. Collaboration with the National Agricultural Coordination Committee (1 July 1976 through 30 June 1977). Activity I.NS.411
4. Collaboration on the Production, Processing and Use in Improving Agricultural Research Information (August 1976 through June 1977). Activity I.NS.412
5. Provision of Advisory Services to those Units which Produce, Process and Use Agricultural Socio-economic Information, so as to Up-grade Performance and Assure Linkage with National and Regional Systems (1 July 1976 through 30 June 1977, San Salvador). Activity I.NS.413
6. Collaboration on Up-grading the Information Networks on Marketing and Crop Prediction at a National Level, with Regional Linkages (1 July 1976 through 30 June 1977, San Salvador). Activity I.NS.414

Line II: Agricultural Education

1. Seminar Workshop on Interinstitutional Integration in the Agricultural Education Sub-sector (March through April 1977). Activity II.NS.111
2. Technical Training so as to Up-grade Scientific and Teaching Capabilities of Teaching Staff (October 15, 1976 through March 1977). Activity II.NS.211
3. Seminar Workshop on the Evaluation of Agencies (September 1976, San Salvador). Activity II.NS.213

4. Provision of Advisory Services on the I Meeting of the Regional Association of Agricultural Education Agencies of Central America (October 18-20, 1976, San Salvador). Activity II.NZ.112

Line III: Agricultural Research

1. Collaboration on the Publication of an Informative Bulletin "Pulses" (June 1977, San Salvador). Activity III.NZ.213

Line IV: Fostering Agricultural Production

1. Course on the Supervision of Agricultural Extension (April 18-29, 1977). Activity IV.NS.112
2. Technical Cooperation provided the Planning Ministry on its Policy for the Conservation, Management and Use of Natural Renewable Resources (August 1976 through April 1977, San Salvador). Activity IV.NS.211
3. Provision of Advisory Services to the Planning Ministry and Head Office for Irrigation and Drainage Work on the Revision of Legislation concerning the Use and Management of Water (October 1976 through May 1977, San Salvador). Activity IV.NS.212
4. Advisory Services provided the Department of Information at CENTA on Supporting the Basic Grains Program (June through December 1976, San Salvador). Activity IV.NS.311
5. Provision of Advisory Services to CENTA on the Programming of Research in Basic Grains (1 July 1976 through 30 June 1977, Santa Tecla). Activity IV.NS.312
6. Provision of Advisory Services on the Basic Grains Program and on Transfer of Technology Techniques (September to November 1976 and April 1977, Santa Tecla). Activity IV.NS.313
7. Collaboration on the Training of CENTA Technicians on Production Technologies in Corn and Beans (September through December 1976). Activity IV.NS.317
8. Collaboration on the Training of CENTA Technicians in Communications and Agricultural Extension Techniques (September to November 1976, Santa Tecla and San Andres Experiment Station). Activity IV.NS.318
9. Seminar on Experimental Statistics (April 25-29, 1977, San Salvador). Activity IV.NS.3110
10. Institutional Cooperation on Food Production to the Ministry of Agriculture (March through April 1977). Activity IV.NS.3111
11. Second Seminar on Experimental Statistics (June 6-10, 1977, San Salvador). Activity IV.NS.3113
12. Support provided on the Dissemination of Information about the National Coffee Rust Program (January to June 1977). Activity IV.NS.613

Line VI: Fostering and Implementing Structural Change

1. Provision of Advisory Services and Training on the Preparation of Agrarian Transformation Projects (July 1976). Activity VI.NS.112
2. Provision of Advisory Services and Training in Agrarian Transformation, "Campesino" Organization and Community Enterprises (July 1976). Activity VI.NS.114
3. Study of the Development and Establishment of "Campesino" Organization Forms, and their Participation in the Agrarian Transformation Process - Seminar Workshop on Training in Organization Aspects (Production Cooperative "El Tigre") (1 December 1976 to January 25, 1977, Ahuachapán and San Salvador). Activity VI.NS.115
4. Evaluation of the Salvadorian Communal Union (1 July 1976 through 15 April 1977). Activity VI.NS.118
5. Economic Survey on "Campesino" Associative Enterprises for Agricultural Participation throughout the Central American Isthmus (May through June 1977). Activity VI.NS.1110
6. Seminar on the Evaluation of Training in the Organization of Agricultural Production Associative Enterprises (January 25-27, 1977, San Salvador). Activity VI.NS.120

Line VII: Administration of Agricultural Policy

1. Technical Cooperation provided on the Strengthening of Institutional Planning for the Agricultural Sector (November 1976 through April 1977). Activity VII.NS.111

GUATEMALA

Line I: Analysis and Information for Rural Development

1. Institutional Diagnostic Study of the Sub-systems and Key Agencies working with IICA on Technical Cooperation Projects in Guatemala (September 1976 through March 1977, Guatemala City). Activity I.NG.111
2. Collaboration provided the National Coordination Committee for Agricultural Information in Guatemala (1 July 1976 through 30 June 1977). Activity I.NG.411
3. Collaboration provided on Up-grading the Production, Processing and Use of Agricultural Research Information in Guatemala (1 July 1976 through 30 June 1977). Activity I.NG.412
4. Provision of Advisory Services to the Agencies which Produce, Process and Use Agricultural Socio-economic Information, so as to Up-grade their Performance and their Linkage with the National and Regional Information Systems (August 1976 through June 1977). Activity I.NG.413
5. Collaboration provided on Up-grading the Production, Processing and Use of Marketing and Price Prediction Information, and its Linkage with Regional Networks (September 1976 through June 1977). Activity I.NG.414

6. Publication and Editorial Services (1 July 1976 through 30 June 1977). Activity I.NZ.213
7. Publication of Information Bulletins (1 July 1976 through 30 June 1977). Activity I.NA.311
8. Information for the Press, Radio and Television (1 July 1976 through 30 June 1977). Activity I.NZ.312
9. Attending Programming Meetings (January, May and June, 1977). Activity I.NS.113
10. Attending Programming Meetings (November 1976 through June 1977). Activity I.NP.113

Line II: Agricultural Education

1. Preparing a Methodological Document to Carry Out a Study on the Quantification of Differentiated Occupational Roles in the Rural Sector (May 18-20, 1977, Guatemala City). Activity II.NG.211
2. Technical Meetings with Functionaries from Middle-level, Higher and Non-formal Education Agencies on the Usefulness of Studies concerning Occupational Roles in the Rural Sector (November 1976 through May 1977, Guatemala City). Activity II.NG.212
3. Technical Meeting to Plan and Program a Study on the Occupational Roles in the Rural Sector. (May 1977, Guatemala City). Activity II.NG.213

Line III: Agricultural Research

1. Strengthening the Coordination between IICA and DIGESA for the Development of Systems for the Diffusion of Technologies (November 1976 through April 1977). Activity III.NG.111
2. Collaboration provided the Science and Technology Institute (ICTA) through the Agricultural Information Program of the Central American Isthmus, on the Publication of a Technical Agricultural Guide for Guatemala (1 July 1976 through 30 June 1977). Activity III.NG.112
3. Seminar-Workshop on Technological Research to Assure the Absorption of a Larger Proportion of Labor (June 20-24, 1976). Activity III.NG.113

Line IV: Fostering Agricultural Production

1. Cooperation provided ICTA and DIGESA on the Implementation of Coordination Mechanisms for the Development of a System for the Transfer of Technology to Cooperatives or other Associative Forms of Production (August through October 1976, Guatemala City). Activity IV.NG.311
2. Technical Cooperation provided the Agricultural Extension and Training Division on the Formulation of Extension Projects for each Food Crop and Multicropping Systems (February 16 to April 14, 1977, Guatemala City). Activity IV.NG.313

3. Provision of Advisory Services to the High-level Committee on the Elaboration of an Intensive National Coffee Production Plan (February through April 1977, Guatemala City). Activity IV.NG.611
4. Provision of Advisory Services to FEDECOCAGIA on its Technical Assistance Program (September 13, 1977, Guatemala City). Activity IV.NG.612
5. Provision of Advisory Services to ANACATE on Information Aspects of the Campaign to Prevent the Coffee Rust Disease (September 13, 1976 through March 16, 1977, Guatemala City). Activity IV.NG.613

Line VI: Fostering and Implementing Structural Change

1. Provision of Advisory Services on the Reformulation of the Law concerning the National Agrarian Transformation Institute (August 1976, Guatemala City). Activity VI.NG.111
2. Cooperation provided INTA through the Permanent IICA-INTA Consultation Committee on the Organization of the VI Inter-American Meeting of Agrarian Reform Executives, and Follow-up Activities (November 22-17, 1976, Guatemala City). Activity VI.NG.115
3. Provision of Advisory Services to INTA on the programming of a Project in the Transversal Fringe of the Northern Zone (May to June 1977, Guatemala City). Activity VI.NG.116
4. Evaluation of PRACA (June 1977, Guatemala City). Activity VI.NG.117

Line VII: Administration of Agricultural Policy

1. Cooperation with the Sectoral Agricultural Planning Unit on the Definition of Functions of the Regional Development Committees (March 7-9, 1977, Guatemala City). Activity VII.NG.211
2. Cooperation with USPA and DIGESA on the Formulation of a Program for the Creation of Sub-regional and Local Development Committees (February through April 1977, Guatemala City). Activity VII.NG.213
3. Cooperation with DIGESA on Strengthening its Studies and Projects Unit, through an IICA-IDB Agreement (1 July 1976 through 30 June 1977, Guatemala City). Activity VII.NG.215

GUYANA

Line I: Analysis and Information for Rural Development

1. Systematization of Data on Institutional Systems Serving the Agricultural Sector (July to December 1976, Georgetown). Activity I.LG.111

2. Participation in the Formulation of Guyana's Action Plan (April 1977, Georgetown). Activity I.LZ.112

Line II: Agricultural Education

1. Diagnostic Study of the Existing Situation in the Agricultural Extension Sub-sector (July 1976 through May 1977). Activity I.LG.211
2. Participation in a Training Seminar for Extensionists (June 6-10, 1977). Activity I.LG.213

Line IV: Fostering Agricultural Production

1. Collaborating on the Establishment of Demonstration Farms (November 1976 through June 1977). Activity IV.LG.311
2. Study of the Current Situation of Known Technologies (June 1977, Georgetown). Activity IV.LG.312
3. Development of Research Activities on Demonstration Farms (November 1976 through June 1977). Activity IV.LG.313
4. Training of Extensionists in the Field of Legume Cultivation (April through June 1977). Activity IV.LG.315
5. Collaboration provided on Short Courses for Farmers, on Legume Cultivation (April through June 1977, Gysueo). Activity IV.LG.316
6. Diagnostic Study of the Post-harvest Problems in Guyana (March 13-20, 1977, Georgetown). Activity IV.LZ.914

HAITI

Line I: Analysis and Information for Rural Development

1. Study of the Socio-economic Background of the Agricultural Sector of Haiti (July to December 1976, Port-au-Prince). Activity I.LH.111
2. Up-dating the Country-level Action Plan in Haiti (January through March 1977, Port-au-Prince). Activity I.LH.112

Line II: Agricultural Education

1. Participation in the Implementation of a Project to Strengthen the Faculty of Agronomy and Veterinary Medicine in Haiti (September 1976 through June 1977, Port-au-Prince). Activity I.LLH.111
2. Finalization of the Feasibility Study Document for the Integrated Project for Rural Education in Haiti (July through December 1976, Port-au-Prince). Activity I.LLH.112
3. Finalization and Negotiation for Financing of the Project to Strengthen COCEA (January through June 1977, Port-au-Prince). Activity I.LLH.113

Line IV: Fostering Agricultural Production

1. Cooperation provided the Government of Haiti on the Elaboration of an Institutional Scheme for the Agency Governing the Production of Seed (September 1976 to June 1977, Port-au-Prince). Activity IV.LH.311
2. Cooperation for the Creation and Getting Underway of SENACA (1 July 1976 through 30 June 1977; Port-au-Prince). Activity IV.LH.411
3. Cooperation on the Training of Technical Personnel from SENACA (1 July 1976 through 30 June 1977, Port-au-Prince). Activity IV.LH.412
4. Collaboration for the Institutionalization of a Price Information Service (1 July 1976 through 30 June 1977, Port-au-Prince). Activity IV.LH.413
5. Cooperation on the Preparation of Basic Marketing Studies (1 July 1976 through 30 June 1977, Port-au-Prince). Activity IV.LH.414
6. Cooperation for the Formulation and Preparation of Marketing Projects (1 July 1976 through 30 June 1977, Port-au-Prince). Activity IV.LH.415
7. Administration and Management of the Three-way Haiti/CIDA/IICA Project for the Creation of a National Agricultural Marketing Service in Haiti (1 July 1976 through 30 June 1977, Port-au-Prince). Activity IV.LH.416
8. Support provided the Marketing Program in Haiti (June 1977). Activity IV.NZ.915

Line VI: Fostering and Implementing Structural Change

1. Continuation with Studies on Traditional Models of "Campesino" Organization and Other Associative Forms, and Specific Experiences in Communal and "Campesino" Organization (1 July 1976 through 30 June 1977). Activity VLLH.211

Line VII: Administration of Agricultural Policy

1. Collaboration on the Elaboration of a Five-year Agricultural Development Plan (July through October 1976, Port-au-Prince). Activity VILLH.111
2. Cooperation provided on the Elaboration, Coordination and Evaluation of Annual Sectoral Programs (1 July 1976 through 30 June 1977, Port-au-Prince). Activity VII.LH.112
3. Cooperation on the Identification of Development Projects for the Sector (1 July 1976 through 30 June 1977, Port-au-Prince). Activity VILLH.113

4. Cooperation provided on Studies concerning the Preparation and Evaluation of an Investment Project in Institution Building in a Sub-sector (1 July 1976 through 30 June 1977, Port-au-Prince). Activity VII.LH.114
5. Cooperation provided on the Generation of Basic Information for Planning Purposes (1 July 1976 through 30 June 1977, Port-au-Prince). Activity VII.LH.115
6. Cooperation provided on the Implementation of a Training Program for Personnel from the Programming Unit (1 July 1976 through 30 June 1977, Port-au-Prince). Activity VILLH.116
7. Administration and Management of the Three-way Haiti/CIDA/IICA Project to Strengthen the Programming Unit of the Ministry of Agriculture of Haiti (1 July 1976 through 30 June 1977, Port-au-Prince). Activity VILLH.117
8. Collaboration provided on the Institutional Analysis of the Agricultural Sectoral Agencies in Haiti (January through June 1977, Port-au-Prince). Activity VILLH.211
9. Provision of Advisory Services on the Preparation of an Institutional Development Program for the Agricultural Sector of Haiti (January through June 1977, Port-au-Prince). Activity VILLH.212
10. Organization and Functioning of the Technical Secretariat for the Development "Islets" with Mechanisms for Programming, Controlling and Self-evaluating their Activities (1 July 1976 through 30 June 1977). Activity VILLH.221
11. Analysis and Diagnostic Study of the Present Situation of the Development "Islets" (1 July 1976 through 30 June 1977). Activity VILLH.222
12. Planning the "Islet" Development Programs (1 July 1976 through 30 June 1977). Activity VILLH.223
13. Organization of a Permanent System for Training and Up-grading Human Resources participating directly in "Islet" Actions (1 July 1976 through 30 June 1977). Activity VILLH.224
14. Coordination, Supervision and Evaluation of the Actions of National, International, Public and Private Institutions working with the "Islet" Program (1 July 1976 through 30 June 1977). Activity VILLH.225
15. Preparation and Dissemination of Action Methods and Instruments for the Implementation of Planned Activities at the "Islets" (1 July 1976 through 30 June 1977). Activity VILLH.226
16. Collaboration on the Organization and Getting Underway of the Technical Secretariat of the Development "Islets" (1 July 1976 through 30 June 1977). Activity VII.LH.

HONDURAS

Line I: Analysis and Information for Rural Development

1. Analysis of Rural and Institutional Development in Honduras to Up-date IICA's Country-level Action Plan for that country (July to October 1976). Activity I.NH.111
2. Collaboration provided the National Coordinator Committee on Agricultural Information in Honduras (1 July 1976 through 30 June 1977, Tegucigalpa). Activity I.NH.411
3. Theory and Practice Course to Train Personnel on Compiling Price Prediction Information (April 18-29, 1977, Tegucigalpa). Activity I.NH.412
4. Theory and Practice Course on Carrying out Surveys on a Sampling Basis (April 18-29, 1977, Tegucigalpa). Activity I.NH.413
5. Institutional Study of User Needs in Agricultural Information (February through July 1977, Tegucigalpa). Activity I.NH.414
6. First Meeting of the Agricultural Research Working Group of Honduras for the Agricultural Information Program of the Central American Isthmus (Activity I.NH.419)
7. First Meeting of the Agricultural Research Working Group of Honduras for the Agricultural Information Program of the Central American Isthmus (November 17, 1976, Tegucigalpa). Activity I.NH.

Line II: Agricultural Education

1. Technical Training of Personnel from the Sub-program to Up-grade Home and Rural Youth Activities (August 9-14, 1976, Santa Rosa). Activity II.NH.212
2. Collaboration provided the Regional University Center of the Atlantic Coast (CURLA) on the Formulation and Implementation of a Development Project (February through June 1977, La Ceiba, Tegucigalpa). Activity II.NH.214
3. Processing and Getting Underway of the Technical Assistance Agreement for the National Agricultural School at Catacamas (January through June 1977, Catacamas, Tegucigalpa). Activity II.NG.215
4. Collaboration provided the Head Office of Agricultural Operations of the Natural Resources Secretariat, on the Formulation of a Research and Extension Development Project (March through June 1977, Tegucigalpa). Activity II.NH.216
5. Analytical Study of the National School of Agriculture (1 May through 1 June 1977, Catacamas, Tegucigalpa). Activity II.NH.252
6. Formulation of an Institutional Structure Proposal for Academic, Technical and Administrative Decentralization (June 2-22, 1977, Tegucigalpa). Activity II.NH.253

7. Collaboration provided the Natural Resources Secretariat on Preparing a Request to Extend the World Bank Loan for the National School of Agriculture (April 14 to May 25, 1977, Catacamas, Tegucigalpa). Activity II.NH.

Line III: Agricultural Research

1. Processing and Operation of the Technical Assistance Agreement on Agricultural Research (February through June 1977, Tegucigalpa). Activity III.NH.111
2. Support provided the Natural Resources Secretariat on Holding the VIII Pan-American Seed Seminar (March 7-12, 1977, Tegucigalpa). Activity III.NH.112

Line IV: Fostering Agricultural Production

1. Support provided on the Identification and Elaboration of New Irrigation Projects for "Campesino" Associative Enterprises (July through December 1976). Activity IV.NH.211
2. Collaboration provided on the Organization and Operation of Irrigation Districts in Flores and Selguapa (October 1976 through March 1977, Comayagua). Activity IV.NH.212
3. Collaboration and Advisory Services provided on the Formulation of a New General Waters Law, and its Regulations (July 1976 through January 1977, Tegucigalpa). Activity IV.NH.213
4. Collaboration and Advisory Services provided on the Creation of an Agricultural Marketing Agency in Honduras (March, July and August 1976, Tegucigalpa). Activity IV.NH.411
5. Seminar on the Analysis of Agricultural Credit (September 20-25, 1976, Tegucigalpa). Activity IV.NH.412
6. Collaboration provided the Honduras Coffee Institute on Formulating a Rust Prevention Program (October 1976 through March 1977, Tegucigalpa). Activity IV.NH.612
7. Collaboration provided the Honduras Coffee Institute on the Methodological Design of a Personnel Training Study (Tegucigalpa). Activity IV.NH.613
8. Collaboration provided the Honduras Coffee Institute on a Study to Train Personnel (August through December 1976, Tegucigalpa). Activity IV.NH.
9. Intensive Agricultural Development Course at the Agricultural School (October 27-31, 1976, Catacamas). Activity IV.NH.
10. First National Course in Professional and "Campesino" Training on the Cultivation of Potato in Honduras (June 26-30, 1977). Activity IV.NH.

Line V: Multinational Integration

1. Advisory Services provided on Area Diagnosis (February through June 1977, Santa Elena, Yarula, Cabañas). Activity V.NH.SB.111

2. Technical Cooperation provided on the Identification and Selection of Sub-projects (April to June 1977, Santa Elena, Yarula, Cabañas). Activity V.NH.SB.112
3. Technical Cooperation provided on Preparing Selected Sub-projects (April to June 1977, Santa Elena, Yarula, Cabañas). Activity V.NH.SB.113
4. Technical Cooperation provided on "Campesino" Organization (April to June 1977, Santa Elena, Yarula, Cabañas). Activity V.NH.SB.114
5. Technical Cooperation provided on Agricultural Experimentation (April to June 1977, Santa Elena, Yarula, Cabañas). Activity V.NH.SB.115
6. Provision of Advisory Services on Production Systems and Agronomic Studies (May through June 1977, Santa Elena, Yarula, Cabañas). Activity V.NH.SB.116
7. Provision of Advisory Services in Organization (February through June, 1977). Activity V.NH.SB.118
8. Provision of Advisory Services in Administration (February through June, 1977). Activity V.NH.119
9. Elaboration of the 1977-78 Operative Plan (May 1977, Tegucigalpa). Activity V.NH.SB.1110
9. Coordination of Laboratories on "Campesino" Enterprise Organization Methodologies in Agrarian Reform Programs (July to November 1976, El Progreso, Yoro). Activity VI.NZ.112
10. Central American Meeting of "Campesino" Community Enterprise Leaders to Strengthen the Agrarian Reform Process throughout the Isthmus (June 27-30, 1976, El Progreso, Yoro). Activity VI.NZ.113
11. Seminar on Agrarian Law (August 23-26, 1976, Tegucigalpa). Activity VI.NZ.119
12. Provision of Advisory and Other Services to the Agrarian Reform Agencies of the Central American Isthmus (July 1976 and January 1977, Tegucigalpa). Activity VI.NZ.1110
13. Experimental Laboratory on "Campesino" Community Enterprise Organization in Agrarian Reform Programs (May 1977). Activity VI.NZ.311
14. Experimental Laboratories on "Campesino" Community Enterprise Organization in Agrarian Reform Programs (July to November 1976, El Progreso, Yoro). Activity VI.NZ.
15. Training in "Campesino" Organization Experimental Laboratories (August 12-26, 1976, Guanchías). Activity VI.NP.119

Line VII: Administration of Agricultural Policy

Line VI: Fostering and Implementing Structural Change

1. Provision of Advisory Services and Collaboration to the National Agrarian Institute on the Implementation of its New Institutional Structure (August 24 to September 1, 1976, Tegucigalpa). Activity VI.NH.111
2. Seminar for Judges and Members of the Supreme Court of Justice on Agrarian Law (August 23-26, 1976, Tegucigalpa). Activity VI.NH.113
3. Provision of Advisory Services on the Organization of Agrarian Rights and Privileges (January 6-13, 1977, Tegucigalpa). Activity VI.NH.114
4. Course for Agrarian Reform Promotors (February 28 to March 15, 1977, Tegucigalpa). Activity VI.NH.116
5. Evaluation Case Studies of "Campesino" Associative Enterprises (1 July 1976 through 30 June 1977, Valle de Jamastrán). Activity VI.NH.212
6. Intensive Agrarian Development Course (November 27 to October 1, 1976, La Ceiba). Activity VI.NH.
7. Seminar on Current Agrarian Reform Problems in Honduras (August 21-24, 1976, San Pedro Sula). Activity VI.NH.
8. II Meeting of "Campesino" Community Enterprise Leaders from the Central American Isthmus (June 26-30, 1977). Activity VI.NH.

1. Provision of Advisory Services and Collaboration on the Preparation of Agricultural Development Projects (Simon Bolivar Fund Project) (September to October 1976 and June 1977, Tegucigalpa and Frontier Areas). Activity VII.NH.111
2. PEPA Course - In-service Training (July to October 1976, Tegucigalpa). Activity VII.NH.113a
3. Seminar on Agricultural Development Projects (October 18-19, 1976, Tegucigalpa). Activity VII.NH.113b
4. Institutionalization of Agricultural Projects Courses at the National University of Honduras (November 1-20, 1976, Tegucigalpa). Activity VII.NH.113c
5. Institutional Analysis of the Projects Department (November 1 to December 15, 1976, Tegucigalpa). Activity VII.NH.114
6. Basic Study on In-service Training Programs for Personnel (September 1976 through May 1977, Tegucigalpa). Activity VII.NH.212
7. Preparation of Institutional Development Projects (Tegucigalpa). Activity VII.NH.214

JAMAICA

Line I: Analysis and Information for Rural Development

1. Participation on the Formulation of Jamaica's Action Plan (April 1977, Kingston). Activity I.LZ.113

Line IV: Fostering Agricultural Production

1. Diagnostic Study of the Post-harvest Problems in Jamaica (August 10-13, 1976, Kingston). Activity IV.LZ.913

MEXICO**Line I: Analysis and Information for Rural Development**

1. Compiling Information to Up-date the National Diagnostic Study (1 July 1976 through 31 May 1977, Mexico D.F.). Activity I.NM.111
2. Series of Conferences at the National Autonomous University of Mexico on the Development of Agricultural Information Systems (October 4-7, 1976). Activity I.D.366
3. Participation at the 38th. World Congress of the International Documentation Federation (September 28 to October 1, 1976, Mexico D.F.). Activity I.D.367

Line II: Agricultural Education

1. Obtaining Up-dated Information about the Agricultural Education Sub-sector (January through June 1977). Activity II.NM.111
2. Preparation of Publication of Basic Documents on Self-study and Training Programs in Rural Development (1 July 1976 through 30 June 1977). Activity II.NM.112
3. Second National Meeting of Directors of Higher Agricultural Education Institutions (March 28-31, 1977, Monterrey, N.L.). Activity II.NM.113
4. National Encounter - Higher Agricultural Education Institutions. Linkage of Education with the Rural Community (May 18-20, 1977). Activity II.NM.114
5. Round-Table on Rural Development Programs (March 29, 1977, Monterrey, N.L.). Activity II.NM.213
6. Provision of Advisory Services on Self-study and Accreditation of the Higher Agricultural Education Schools (July 1976, Guadalajara). Activity II.NM.215
7. Second National Meeting of Postgraduate Program Directors (August 8, 1976, Mexico D.F.). Activity II.NM.223
8. Provision of Advisory Services to the Agricultural Extension Head Office (January through June 1977). Activity II.NM.231
9. Collaboration provided on the Training Program of the Extension Service (March through May, 1977, Sonora and Torreon). Activity II.NM.232
10. Seminar on Evaluation and Institutional Accreditation of Agricultural Schools (August 11-14, 1976, Uruapan, Mich). Activity II.NM.

11. Meeting of the Self-study and Accreditation Program Coordinators (September 30 to October 2, 1976, Mexico D.F.). Activity II.NM.
12. Seminar on Evaluation and Institutional Planning for Agricultural Schools (July 14-16, 1976, Monterrey, N.L.). Activity II.NM.
13. Reciprocal Training in Administration and Management (October 1-10, 1976). Activity II.AV.223

Line IV: Fostering Agricultural Production

1. Collaboration on the Getting Underway and Consolidation of Research and Diagnostic Efforts in Marketing (1 July 1976 through 30 June 1977). Activity IV.NM.411
2. Participation in the Marketing Course Organized by the Commerce Secretariat's Planning Unit (June 1977). Activity IV.NM.912
3. Preparation of Material for a Monthly Bulletin on Post-harvest Problems and Techniques in Latin America (April through June 1977). Activity IV.NM.913
4. Diagnostic Study of Post-harvest Problems and Outlining Institutional Solutions (Activity IV.NM.921)
5. Participation in a Marketing Course for Functionaries of the Commerce Secretariat (Activity IV.NM.922)
6. II Latin American Seminar on Drip Irrigation (1 January through 30 June 1977). Activity IV.SZ.214
7. Training of National Personnel in Drip Irrigation (June 20-26, 1977, Coahuila and Aguas Calientes). Activity IV.NH.216
8. Technical Training at the II Latin American Seminar on Drip Irrigation (June 20-26, 1977, Torreon, Coahuila). Activity IV.NG.317

Line VII: Administration of Agricultural Policy

1. Technical Meetings for Directors and Professionals of the COCOSAE (November 24-27, 1976, Puebla). Activity VII.NM.111
2. Provision of Advisory Services to COCOSAE Personnel (October 1976, Puebla). Activity VII.NM.112
3. Provision of Advisory Services and Training on the Organization and Administration of "Ejido" Development Processes (July through September 1976). Activity VII.NM.212

NICARAGUA**Line I: Analysis and Information for Rural Development**

1. Up-dating and Analysis of Information and Special Studies on Rural and Institutional Development in Nicaragua (1 July 1976 through 30 June 1977, Managua). Activity I.NN.111

2. Institutional Programming Meetings of IICA, to Formulate the Action Plan (1 July 1976 through 30 June 1977, Managua). Activity I.NN.112
3. Collaboration provided the National Coordination Committee on Agricultural Information of Nicaragua, to Finish the Diagnostic Study to Serve as a Basis for the National Plan (1 July 1976 through 30 June 1977, Managua). Activity I.NN.411

Line II: Agricultural Education

1. Preparing a Methodology Document for Diagnostic Studies and Planning (1 July to 10 September 1976, Managua). Activity II.NZ.111
2. Provision of Advisory Services to the Directive Council of the Meeting of the Regional Association of Agricultural Education Institutions of Central America (February 7-21, 1977, Managua). Activity II.NZ.113

Line III: Agricultural Research

1. Technical Cooperation provided on the Preparation of an Educational Plan for INTA (1 July 1976 through 30 June 1977, Managua). Activity III.NN.112
2. Technical Cooperation provided on the Preparation of an IICA Information Plan (1 July 1976 through 30 June 1977, Managua). Activity III.NN.113
3. Technical Cooperation provided on the Preparation of a Research Plan for INTA (1 July 1976 through 30 June 1977, Managua). Activity III.NN.114

Line IV: Fostering Agricultural Production

1. Technical Cooperation provided INBIERNO on the Design and Implementation of a Small Farmer Program (1 July 1976 through 30 June 1977, Managua). Activity IV.NN.311
2. Technical Cooperation provided IAN on the Analysis of its Small Farmer Services (1 July 1976 through 30 June 1977, Managua). Activity IV.NN.312
3. In-service Training for Technicians from the Coffee Extension Service on Aspects pertaining to the Diagnosis and Economic Programming of Small Coffee Farms in the Carazo Area (1 July 1976 through 30 June 1977, Managua). Activity IV.NN.313
4. Technical Cooperation provided on Programs to Encourage Small Farmer Production - National Bank Programs (1 July 1976 through 30 June 1977, Managua). Activity IV.NN.314
5. Collaboration provided the Technical Coffee Rust Emergency Committee and INTA on the Preparation of a Program to Eradicate the Rust (1 July 1976 through 30 June 1977, Managua). Activity IV.NN.611

6. Collaboration provided the Agencies Fostering Coffee Production on the Preparation of an Intensive Production Program on Small and Medium-sized Farms (1 July 1976 through 30 June 1977, Managua). Activity IV.NN.612
7. Provision of Advisory Services on Statistical Sampling to Detect the Rust (1 July 1976 through 30 June 1977, Managua). Activity IV.NN.613

Line VI: Fostering and Implementing Structural Change

1. Regular Meeting of the Board of Directors of PRACA (April 18-23, 1977, Managua). Activity VI.NZ.117

Line VII: Administration of Agricultural Policy

1. Technical Cooperation provided Sectoral Agencies on the Preparation of Specific Projects, through a PEPA Course (1 July 1976 through 30 June 1977, Managua). Activity VII.NN.111
2. Technical Cooperation provided on the Organization and Strengthening of Institutional Planning Offices (1 July 1976 through 30 June 1977, Managua). Activity VII.NN.112
3. Technical Cooperation provided the Ministry of Agriculture on Internal Organization (1 July 1976 through 30 June 1977, Managua). Activity VII.NN.211
4. Technical Cooperation provided the Ministry of Agriculture on the Process to Evaluate and Prepare Budgets (1 July 1976 through 30 June 1977, Managua). Activity VII.NN.212
5. Technical Cooperation provided on the Design of a Manual on Organization and Operations for the Ministry of Agriculture (1 July 1976 through 30 June 1977, Managua). Activity VII.NN.213
6. Technical Cooperation provided DIPSA on the Evaluation of Development Plan Programs (1 July 1976 through 30 June 1977, Managua). Activity VII.NN.214
7. Training of Personnel in Regional Development Planning and Project Identification (March through May 1977, Managua). Activity VII.NH.112

PANAMA

Line I: Analysis and Information for Rural Development

1. Analysis of the Structure and Financing of the Institutional System of the Agricultural Sector of Panama (September 6-17, 1976). Activity I.NP.111
2. Revision of IICA's Country-level Action Plan (November 15-19, 1976). Activity I.NP.112

Line II: Agricultural Education

1. Evaluation of the Faculty of Agronomy at the University of Panama (June to November 1976, Activity II.NP.111)

2. Teaching Methodology Course in Agricultural Sciences (March 14-18, 1977). Activity II.NP.113
3. Systems Approach to Animal Husbandry Research in the Central American Isthmus - A Seminar (August 3-7, 1976, Boquete, David). Activity II.NP.

Line III: Agricultural Research

1. Provision of Advisory Services to the Animal Husbandry Research Program (1 July 1976 through 30 June 1977, Gualaca). Activity III.NP.111
2. Advisory Services on Soil Fertility and Analysis (August 1976, Santiago de Veraguas). Activity III.NP.115
3. Advisory Services in Legume Cultivation Techniques (February 1976, March and April 1977). Activity III.NP.116
4. Course in Technical Writing for Researchers (June 27-30, 1977, Gualaca). Activity III.NP.117
5. Courses in Statistical Methods and Interpretation of Experimental Designs (September through October, 1976). Activity III.NP.118
6. Course on the Cultivation of Temperate Climate Fruit Trees (February 7-11, 1977, Chiriquí). Activity III.NP.119
7. Course in Communications Media (April 10-16, 1977, Gualaca, Chiriquí). Activity III.NP.1110
8. Course in Statistics and Experimental Methods (April 11-12, 1977, Panama City). Activity III.NP.318

Line IV: Fostering Agricultural Production

1. Cooperation provided DIRENARE on the Reorganization and Reorientation of Programs related to the Conservation of Land and Water Resources (August 1976 through May 1977). Activity IV.NP.211
2. Strengthening the Sub-system in charge of Irrigation and Drainage in Panama (July 1976 through February 1977). Activity IV.NP.211
3. Workshop-Course on the Formulation of Exploitation Plan Models (March 21 to April 1, 1977). Activity IV.NP.
4. Regional (International) Seminar on a Systems Approach to Animal Husbandry Research in the Central American Isthmus (July 1 to August 8, 1976, Boquete, Chiriquí). Activity IV.NZ.511

Line VI: Fostering and Implementing Structural Change

1. Provision of Advisory Services to the National Social Development Office on the Organization and Development of a Training Program (1 July 1976 through 30 June 1977, Penonomé, Coclé). Activity VI.NP.111
2. Technical Meeting on "Campesino" Training (February 14-18, 1977). Activity VI.NP.113

3. Provision of Advisory Services to the National Agrarian Reform Office on Modifying the Agrarian Code and on governing "Campesino" Enterprises (March 1-15, 1977). Activity VI.NP.115
4. Course on Rural Cadastral Surveying (November 8-26, 1976). Activity VI.NP.116
5. Provision of Advisory Services on Agrarian Law (August 16-19, 1976). Activity VI.NP.1111
6. Experimental Laboratory on "Campesino" Organization (April 12-26, 1977, Penonomé, Coclé). Activity VI.NP.1112
7. Establishment of Criteria for Sectoral Planning Supervision, at MIDA (1 July 1976 through 30 June 1977). Activity VI.NP.211
8. Design, Testing and Preparation of Exploitation Plans and Registries (November 1976). Activity VI.NP.212
9. Workshop for the Final Elaboration of Models (October 1976, Divisa). Activity VI.NP.213
10. Five Regional Courses on Planning Agricultural Producer Associative Enterprises (May through June 1977). Activity VI.NP.214

Line VII: Administration of Agricultural Policy

1. Cooperation provided on Administrative Management Aspects at MIDA (January through June 1977). Activity VII.NP.111
2. Provision of Advisory Services and Training on the Preparation of Agricultural Projects (January through June, Santiago de Veraguas, Panama City). Activity VII.NP.114
3. Training and Advisory Services on Specific Projects (July 20 to November 30, 1976). Activity VII.NP.181

PARAGUAY

Line I: Analysis and Information for Rural Development

1. Institutional Analysis of the Rural Sector of Paraguay (August 1976 through June 1977, Asunción). Activity I.SP.111
2. Revision and Up-dating of IICA's Action Plan in Paraguay (January 3 to June 30, 1977, Asunción). Activity I.SP.112
3. Preparation of Project and Country Reports as Scheduled in the Operative Program (January 3 to June 30, 1977, Asunción). Activity I.SP.113
4. Provision of Advisory Services on the Organization and Functioning of the National Agricultural Information Sub-system (October to November 1976 and March to June 1977, Asunción). Activity I.SP.211

Line II: Agricultural Education

1. Collaboration provided the Teaching Institutions of the Agricultural Sector of Paraguay on the Development of a Methodological Alternative for the Characterization of Occupational Roles for the Sector (August to September 1976 and May to June 1977, Asunción and Caazapé). Activity II.SP.112
2. Elaboration of a Document "Characterization of Techniques Used by Small Farmers in the New Colonization Areas of Itapúa Department" (April 27 to May 6, 1977, Asunción). Activity II.SP.114
3. Provision of Advisory Services and Support to the Teaching Support Unit of the Faculty of Veterinary Sciences, on the Programming and Development of Teacher Up-grading Activities, Evaluation, Educational Research and Curriculum Planning (1 August 1976 through 30 June 1977, San Lorenzo). Activity II.SP.211
4. Provision of Advisory Services and Training on the Organization and Orientation of Forestry Production at the Faculty of Agricultural Engineering (1 July 1976 through 30 June 1977, Asunción and San Lorenzo). Activity II.SP.212
5. Provision of Advisory Services to the Agricultural and Forestry Education Office of the Ministry of Agriculture on Productive Teacher Organization at the Agricultural and Forestry Schools (1 July 1976 through 30 June 1977, Asunción). Activity II.SP.214
6. National Training Course for Technical Professors of the Agricultural Schools in Paraguay (November 22 to December 10, 1976). Activity II.SP.215

Line III: Agricultural Research

1. Provision of Advisory Services to the DIEAF on Carrying Out Diagnostic Studies concerning Agricultural and Animal Husbandry Research (1 July 1976 through 30 June 1977, Asunción). Activity III.SP.111
2. Support provided the Creation of a Technical Unit in charge of Programming Agricultural Research (15 August 1976 through 30 June 1977, Asunción). Activity III.SP.112
3. Provision of Advisory Services and Training for the Technical Personnel of the DIEAF on Programming and Evaluating Agricultural Research (1 August 1976 through 30 June 1977, Asunción and Itapúa). Activity III.SP.113
4. Provision of Advisory Services on the Reformulation of the Agricultural Research Model in Paraguay (September 6 to November 25, 1976, Asunción). Activity III.SP.
5. Seminar on Small Farmer Technologies (May 2-6, 1977, Asunción). Activity III.SZ.214

Line IV: Fostering Agricultural Production

1. Advisory Services provided the Marketing Offices to Perfect Price and Marketing Information (1 July 1976 through 30 June 1977, Asunción). Activity IV.SP.412

2. Cooperation provided the IBR, CASH and SEAG Agencies on Establishing a Marketing Mechanism for Small Farmers in the Itapúa and Paraguari Zones (1 July 1976 through 30 June 1977, Itapúa, Paraguari and Asunción). Activity IV.SP.413
3. Technical Meeting to Foster the Study and Preparation of Agricultural Marketing Standards (1 July 1976 through 30 June 1977, Asunción). Activity IV.SP.414
4. Collaboration provided on Marketing and Market Aspects of the National Rice Program (June 1977, Asunción). Activity IV.SP.415

Line VI: Fostering and Implementing Structural Change

1. Analysis of the Colonization Policy as a Sectoral Development Instrument (November 1976 through June 1977, Asunción). Activity VI.SP.312
2. Design of Alternatives to Define a Basic Model of Associative Enterprises (August 15 to December 15, 1976, Ybyrarobaná). Activity VI.SP.313
3. Determining Land Use in the Gral. Bernardino Caballero Colony (July 15-30, 1976, Ybyrarobaná). Activity VI.SP.315
4. Analysis of Production Systems used in Areas Bordering the Gral. Bernardino Caballero Colony (September 15 to November 30, 1976, Ybyrarobaná). Activity VI.SP.316
5. A Study of the Institutional Organization operating at the Gral. Bernardino Caballero Colony (August 15-30, 1976, Ybyrarobaná). Activity VI.SP.317
6. Elaboration of Systematic Production Alternatives for Selected Sectors of the Colony with Associative Enterprises (1 September 1976 through 30 June 1977, Asunción and Ybyrarobaná). Activity VI.SP.318
7. Formulation of Physical Planning Alternatives for Selected Sectors of the Colony with Associative Enterprises (1 January through 30 June 1977, Ybyrarobaná). Activity VI.SP.319
8. Formulation of Alternatives for Building Access Roads to the Selected Sectors of the Colony with Associative Enterprises (1 July 1976 through 30 June 1977, Ybyrarobaná). Activity VI.SP.3110
9. Elaboration of Housing Models and Other Types of Service Buildings for the Colony Associative Enterprises (February 1 to June 30, 1977, Ybyrarobaná). Activity VI.SP.3111
10. Selection of Alternatives, Compatibility and Determination of the Module in Selected Sectors of the Colony with Associative Enterprises (March 1-30, 1977, Asunción and Ybyrarobaná). Activity VI.SP.3112
11. Establishing Dimensions and Delimiting the First Associative Enterprise of the Colony (April 1-30, 1977, Ybyrarobaná). Activity VI.SP.3113

12. Study of Regional and Local Markets as related to the Colony (1 November through 31 December 1976, Asunción and Ybyrarobaná). Activity VI.SP.3114
 13. Elaboration of a Definitive Production Plan for the first two Associative Enterprises, and the Implementation of the Plan for the first Enterprise (1 January through 30 June 1977, Ybyrarobaná and Asunción). Activity VI.SP.3115
 14. Training of Technical Personnel in Associative Enterprise-related Activities (1 March to 30 June 1977, Ybyrarobaná). Activity VI.SP.3116
 15. Design and Getting Underway of an Immediate Production Plan on the Lands of the first Colony Associative Enterprise (July 15 to February 28, 1977, Ybyrarobaná). Activity VI.SP.3117
 16. Conscript Training to Assure their Participation (June 1977, Ybyrarobaná). Activity VI.SP.3118
 17. Survey of the Natural Resources of the Colony (July 8 to August 8, 1976, Asunción and Ybyrarobaná). Activity VI.SP.3119
 18. 1 Meeting to Appoint the pertinent Advisory Committee, with participation of the Directors of Agrarian Reform, "Campesino" Organization and Colonization Agencies of the Southern Zone Countries (July 2-6, 1976, Asunción). Activity VI.SZ.111
7. Provision of Advisory Services to the SEAG, IBR and BNF Agencies on the Formulation of a Diagnostic Study of the Cordillera Zone (November 1976 through June 1977, Cordillera Dept. and Asunción). Activity VII.SP.315
 8. In-service Training on the Preparation and Evaluation of Projects (November 1976 through June 1977, Asunción). Activity VII.SZ.113

PERU

Line I: Analysis and Information for Rural Development

1. Support provided on the Round-Table on Agricultural Information and its Integration to AGRINTER (October 5-8, 1976, Lima). Activity I.AP.211
2. Diagnostic Study of the Current Situation of the Agricultural Information Sub-system in Peru (October 1976 through Mat 1977, Lima). Activity I.AP.212
3. Intensive Course in Technical Writing for Functionaries of the Food Ministry (September 8-10, 1976, Lima). Activity I.AP.214
4. Support provided for the First Course in Agricultural Documentation. Methodology for the AGRINTER and AGRIS Information Systems (May 23 to June 10, 1977, Lima). Activity I.AP.215

Line VII: Administration of Agricultural Policy

1. Provision of Advisory Services to Technical Personnel of the Ministry of Agriculture on Aspects Related to the Study of Development Policies (1 August 1976 through 30 May, Asunción). Activity VII.SP.111
2. Provision of Advisory Services to the Technical Personnel of the Sectoral Planning Department of the Technical Planning Secretariat on the Preparation of an Agricultural Development Plan (1 August 1976 through 30 June 1977, Asunción). Activity VII.SP.112
3. Provision of Advisory Services on the Organization and Operation of a Planning Office at the Rural Welfare Institute (1 August 1976 through 30 May 1977, Asunción). Activity VII.SP.113
4. Seminar on Planning and Information Aspects of Sectoral Planning (November 22-26, 1976, Asunción). Activity VII.SP.114
5. Provision of Advisory Services to the SEAG, IBR and BNF Agencies on the Formulation of a Diagnostic Study for an Operative Plan for Itapúa (February through June 1977, Asunción and Itapúa). Activity VII.SP.311
6. Advisory Services provided the SEAG, IBR and BNF Agencies on the Formulation and Implementation of an Operative Plan for the Paraguari Zone (November 1976 through April 1977, Paraguari and Asunción). Activity VII.SP.313

Line II: Agricultural Education

1. Training of Professionals from the Basic Workman's Education Office, of the Ministry of Education (1 July 1976 through 30 June 1977). Activity II.AP.111
2. Cooperation and Direct Support provided the National Agrarian University, La Molina (1 July 1976 through 30 June 1977, Lima). Activity II.AP.211
3. Cooperation and Direct Support provided the National Technical University of the Altiplano (Puno), the Universities of San Antonio Abad (Cuzco), of the Amazon (Iquitos), and Technical of Piura (1 July 1976 through 30 June 1977). Activity II.AP.212
4. Working Meeting on the Organization and Management of an Agricultural Sciences Academic Program at the National Technical University of the Altiplano (September 27 to October 1, 1976, Puno). Activity II.AP.213
5. Working Meeting on the Organization and Management of an Agricultural Sciences Academic Program at the National Technical University of Piura (1 July 1976 through 30 June 1977, Piura). Activity II.AP.214

Line III: Agricultural Research

1. Support provided the Research Office on the Planning of an Integral Research Program so as to Increase Food Production (August 1, 1976 to May 25, 1977, Lima, Tarapoto, Chiclayo and Arequipa). Activity III.AP.111

2. Course in Communication for the Transfer of Agricultural Technology to Functionaries of the CRIA II Region (October 25 to November 2, 1976, Chiclayo). Activity III.AP.112
 3. Training of Researchers from CRIA IV in Social and Economic Evaluation Methodologies on Research Results (October 1 to November 20, 1976, Arequipa and Lima). Activity III.AP.113
 4. Collaboration provided the Research Office on Conducting a Priorities Study for the CRIA III Region (August 1, 1976 to May 30, 1977, Tarapoto, Iquitos, Tingo María and Amazonía). Activity III.AP.114
 5. Cooperation provided the Research Office on a Study of Production Techniques, and the Conservation and Utilization of Food by Sierra "Campesinos" (November 1, 1976 to May 31, 1977, Cuzco). Activity III.AP.115
 6. Training of CRIA I Researchers in Field Day Methodologies (August 1976 and January and June, 1977, Cañete and Lima). Activity III.AP.117
 7. Training of CRIA IV Researchers in Field and Agricultural Day Methodologies (June 6 to 10, 1977, Tacna, Arequipa and Cuzco). Activity III.AP.118
 8. Training of Researchers in the Organization and Management of the CRIA IV Region (April 4-6, 1977, Arequipa). Activity III.AP.119
 9. Support provided on Up-grading the Organization and Management of CRIA I (1 July 1976 through 30 June 1977, Lima). Activity III.AP.1110
 10. Support provided the Andean Crop Research Program (August 1976 through June 1977, High Andes). Activity III.AP.312
 11. Establishment of a System for the Maintenance and Evaluation of an Andean Crop Germplasm Bank (August 1976 to May 1977). Activity III.AP.321
 12. Preparation of Bases for Technology Transfer Mechanisms, with the Research Office (February 15 to May 31, 1977, Lima, Arequipa, Chiclayo and Tarapoto). Activity III.AP.
- Line IV: Fostering Agricultural Production**
1. Collaboration provided CENCIRA on a Course in Rural Constructions for Training Centers at the CENICAP (December 1976 and March 1977, Songos Huarochiri and Lima). Activity IV.AP.315
 2. Producer Organization to Participate in the Marketing of Quinoa (April 10-16, 1977, Puno). Activity IV.AP.344
 3. Research in Marketing to Identify Limiting Factors in Food Sector Policies (1 July 1976 through 30 June 1977). Activity IV.AP.411
 4. Cooperation provided on the Formulation and Implementation of a National Marketing Plan (1 July 1976 through 30 June 1977, Lima). Activity IV.AP.412
 5. Support provided on Marketing Training Actions to the Food Ministry (1 July 1976 through 30 June 1977, Lima). Activity IV.AP.413
 6. National Course on Forest Plantations (May 2-21, Huaraz). Activity IV.AP.811
 7. I National Meeting on Forest Plantation Research (November 30 to December 4, 1976, Huancayo). Activity IV.AP.812
 8. Support provided on Activities of the National Forest Plantations Working Group (July 1976 through May 1977). Activity IV.AP.813
 9. Collaboration provided the Waters Office of the Ministry of Agriculture, on Preparing a Document on a Policy to Reorganize the Irrigation Districts (January 13 to February 4, 1977, Lima). Activity IV.AP.
 10. In-service Training on the Organization and Administration of Irrigation Districts (April 12 to May 6, 1977). Activity IV.NCR.212
 11. Preparation of a Feasibility Project (1 July 1976 through 30 June 1977, Lima and Puno). Activity IV.APX.311
 12. Identification and Formation of Producer Cores (1 July 1976 through 30 June 1977, Puno). Activity IV.APX.312
 13. Fostering the Cultivation of Quinoa by "Campesino" Enterprises, Farms and Communities (1 July 1976 through 30 June 1977, Puno). Activity IV.APX.313
 14. Organization and Development of a Technical Assistance Program for Technology Transfer Purposes (1 July 1976 through 30 June 1977, Puno). Activity IV.APX.314
 15. Preparation, Publication and Dissemination of Informative Material (1 July 1976 through 30 June 1977, Puno). Activity IV.APX.315
 16. Organization and getting underway of a Seed Nursery Program (1 July 1976 through 30 June 1977, Puno). Activity IV.APX.316
 17. Economic Returns Study on Quinoa (1 July 1976 through 30 June 1977, Puno). Activity IV.APX.317
 18. Collecting Maintaining and Evaluation of Germplasm (1 July 1976 through 30 June 1977, Puno). Activity IV.APX.318
 19. Plant Breeding Methods (1 July 1976 through 30 June 1977, Puno). Activity IV.APX.319
 20. Establishment of Basic Seed Nurseries (1 July 1976 through 30 June 1977, Puno). Activity IV.APX.3110
 21. Agronomic Improvements (1 July 1976 through 30 June 1977, Puno). Activity IV.APX.3111

22. Plant Protection for the Control of Pests and Diseases (1 July 1976 through 30 June 1977, Puno). Activity IV.APX.3112
23. Soil Capacity Study (1 July 1976 through 30 June 1977, Puno). Activity IV.APX.3113
24. Analysis of Current Technologies and Exploration for New Technologies (1 July 1976 through 30 June 1977, Puno, Arequipa and Cuzco). Activity IV.APX.3114
25. Study of the Supply and Demand for Quinoa (1 July 1976 through 30 June 1977, Puno). Activity IV.APX.3115
26. Study of Marketing Costs and Margins (1 July 1976 through 30 June 1977, Puno). Activity IV.APX.3117
27. Organization of Producers to Participate in the Marketing of Quinoa (1 July 1976 through 30 June 1977, Puno). Activity IV.APX.3118
7. Advisory Services provided the Ministry of Agriculture on Integral Production Systems (April to May 1977, Lima and Pucallpa). Activity VII.AP.412
8. Working Meetings on Integrated Rural Settlements (June 16-17, 1977, Lima). Activity VII.AP.413
9. Reciprocal Training in Agricultural Planning (May 10-14, 1977, Lima). Activity VII.AB.112
10. Technical Training for the National Sectoral Planning Office (July to December 1976, Lima). Activity VII.NP.112

URUGUAY

Line I: Analysis and Information for Rural Development

Line VI: Fostering and Implementing Structural Change

1. Provision of Advisory Services to the Zone Offices of the "Campesino" Enterprise Support Office, on the Formulation and Implementation of Agricultural Projects (May to June 1977, Lima). Activity VI.AP.313
2. Cooperation provided CENCIRA on Courses on the Administration of "Campesino" Enterprises at the Universities in Cuzco and Piura (July to August 1976, Cuzco). Activity VI.AP.314
3. Training in Agrarian Tribunal Aspects (July 9-14, 1976, Lima and Cuzco). Activity VI.AP.

Line VII: Administration of Agricultural Policy

1. Support provided three Zone Offices on the Formulation and Implementation of Concerted Production Plans (November 17-19, 1976, Tacna and Arequipa). Activity VII.AP.111
2. Support provided on Planning Courses and Projects (October 1976 to April 1977). Activity VII.AP.113
3. Seminar on Agricultural Projects - The University and the Institutionalization of Training Programs in Agricultural Projects (May 31 to June 3, 1977, Lima). Activity VII.AP.114a
4. Course on the Preparation and Evaluation of Agricultural Projects. IICA/IDB Agreement (June to August 1976, Lima). Activity VII.AP.114b
5. Working Meeting on the Organization and Management of a Production, Programming and Marketing Sub-system, for Zones I, II, III, IV and X of the Food Ministry (1 June 1976 through 30 June 1977, Lima). Activity VII.AP.211-212
6. National Course on Integrated Rural Settlements (February 28 to March 5, 1977, Tarapoto). Activity VII.AP.411

1. Analysis of the Agricultural Situation in Uruguay (1 July 1976 through 30 June 1977, Montevideo). Activity I.SU.111
2. Analysis of the Agricultural Institutional System (1 July 1976 through 30 June 1977, Montevideo). Activity I.SU.112
3. Technical Meeting on Institutional Analysis Methodologies for Agricultural Management Purposes (October 1976 through June 1977, Montevideo). Activity I.SU.113
4. Up-dating IICA's Action Plan for Uruguay (1 July 1976 through 30 June 1977, Montevideo). Activity I.SU.114
5. Support provided CIAAR on Carrying out needed Studies for the SNIAP (November 1976 to January 1977, Montevideo). Activity I.SU.211
6. Compiling Bibliographic Material for AGRINTER (September 1976 through June 1977, Montevideo). Activity I.SU.213
7. Support provided the Information Programs of the Ministry of Agriculture and Fisheries (MAP) (January to June 1977, Montevideo). Activity I.SU.215
8. Technical Meeting on "Agricultural Publications Series" (June 27-28, 1977, Montevideo). Activity I.SZ.211

Line II: Agricultural Education

1. Provision of Advisory Services on the Basic Diagnostic Study of the Agricultural Education Sub-system in Uruguay (1 July 1976 through 30 June 1977, Montevideo). Activity II.SU.112
2. Participation in Meetings at the Faculty of Agronomy to Revise the Basic Organizational Structure of its Study Plans (1 July 1976 through 30 June 1977, Montevideo). Activity II.SU.211
3. Short Course on Up-grading the Teaching Capability of Professors, and Fostering the Establishment of a Teaching Support Unit at the Faculty of Veterinary Sciences (February to June 1977, Montevideo). Activity II.SU.212

4. Provision of Advisory Services and Support on the Organization of the Department of Animal Production at the Faculty of Agronomy (1 July 1976 through 30 June 1977, Montevideo and Paysandú). Activity II.SU.213
5. Provision of Advisory Services to the Faculty of Veterinary Sciences of the University of the Republic (September 1976, Montevideo). Activity ILSU.

Line III: Agricultural Research

1. Collaboration and Technical Assistance provided on the Development and Analysis of Production Systems (1 July 1976 through 30 June 1977). Activity ILSU.111
2. Support provided on holding an Internal Seminar on the Transfer of Technology (November 16-19, 1976, Montevideo). Activity ILSU.112
3. Provision of Advisory Services and Training on the Production of Information Material (September 1976 to June 1977). Activity III.SU.114

Line IV: Fostering Agricultural Production

1. Provision of Advisory Services and Training on Programming Production Units (March to June 1977, Montevideo). Activity IV.SU.111
2. Provision of Advisory Services and Training on Agro-economic Studies on Colonization Projects (1 July 1976 through 30 June 1977, Montevideo). Activity VI.SU.112
3. Provision of Advisory Services to the Multi-sectoral and Inter-disciplinary Committee Proposed to Study the Improved Coordination and Strengthening of the Uruguayan Institutional Sub-system for the Conservation and Management of Land and Waters (1 July 1976 through 30 June 1977, Montevideo). Activity IV.SU.211
4. Practical Course in Farm Planning for the Conservation of Soil and Water (April 25 to June 6, 1977, Paysandú). Activity IV.SU.212
5. Technical Support provided the National Colonization Institute on the Establishment of Pilot Projects for the Conservation and Management of Soil and Water in the Colonies (1 July 1976 through 30 June 1977, Montevideo). Activity IV.SU.213
6. Advisory Services provided on Agricultural Productivity Economic Studies (1 July 1976 through 30 June 1977, Montevideo). Activity IV.SU.311
7. Publication of Technical Agricultural Production Coefficients (1 July 1976 through 30 June 1977, Montevideo). Activity IV.SU.312
8. Training in Rural Administration (1 July 1976 through 30 June 1977, Montevideo). Activity IV.SU.313

9. Agricultural Regionalization of Uruguay (1 October 1976 through 30 June 1977, Montevideo). Activity IV.SU.321
10. Socio-economic and Institutional Study of a Priority Geographic Area (1 September 1976 through 30 June 1977, Montevideo). Activity IV.SU.322
11. Formulation of a Prefeasibility Global Plan for Regional Planning Purposes (1 January through 30 June 1977). Activity IV.SU.323
12. Formulation of a Regional Planning Methodology Adapted to Uruguayan Priorities (1 August 1976 through 30 June 1977, Montevideo). Activity IV.SU.324
13. Collaboration provided on Marketing Studies Carried Out by the Agricultural Programming and Policies Office (1 July 1976 through 30 June 1977, Montevideo). Activity IV.SU.411
14. Collaboration provided the Agricultural Economics Research Office in Up-grading Marketing Information (1 July 1976 through 30 June 1977, Montevideo). Activity IV.SU.412
15. Collaboration provided ALALC on the Design of a Regional Marketing Information System (July through August 1976, Montevideo). Activity IV.SU.413

Line VII: Administration of Agricultural Policy

1. Advisory Services provided for the Development of Agricultural Policy Models (1 July 1976 through 30 June 1977, Montevideo). Activity VILSU.111
2. In-service Training on the Formulation and Operation of Analytical Techniques and the Implementation of Agricultural Policy (1 July 1976 through 30 June 1977, Montevideo). Activity VII.SU.112
3. Technical Meeting on the Typification of Agricultural Enterprises (May 11-13, 1977, Montevideo). Activity VII.SU.113

VENEZUELA

Line I: Analysis and Information for Rural Development

1. Provision of Advisory Services to the National Agricultural Sciences Information Sub-system (July to December 1976, Maracay, Mérida and Caracas). Activity LAV.211
2. Training Workshop for SININCA Users (October 18-22, 1976, Mérida). Activity LAV.213

Line II: Agricultural Education

1. Training Workshop in Planning, Development and Evaluation of Curricula (November 2-12, 1976, Barinas). Activity IIAV.211

2. Support provided AVIEAS on the Organization of Meetings by Area and by Discipline (1 July 1976 through 30 June 1977, Maracaibo). Activity IL.AV.212
3. National Technical Meeting of Chemistry Professors in Higher Agricultural Education (June 13-16, 1977, Maracaibo). Activity IL.AV.213
4. Workshop on Curricular Planning, at the Faculty of Veterinary Sciences, Central University (May 30 to June 3, 1977, Maracay). Activity IL.AV.214
5. Technical Cooperation on the Development of Postgraduate Courses in Soil Sciences, Plant Protection, Plant Breeding, Animal Genetics, etc. (1 July 1976 through 30 June 1977, Caracas). Activity IL.AV.221
6. Development and Publication of the Study on the Demand for High-level Technical Personnel within the Agricultural Sector (1 July 1976 through 30 June 1977). Activity IL.AV.222
7. Provision of Advisory Services to the Universities, the National Agricultural Research Fund (FONAIAP) and the Grand Marshal Ayacucho Scholarship Foundation (1 July 1976 through 30 June 1977). Activity IL.AV.223
8. Workshop to Determine Postgraduate University Research Priorities in the Andes Region (November 29 to December 4, 1976, Mérida). Activity IL.AV.224
9. Determining Postgraduate University Research Priorities for the Central Region (November 14-20, 1976, Barinas). Activity IL.AV.225
10. Advisory Services provided the Regional Coordination Office of the Agricultural Development Head Office, Ministry of Agriculture and Livestock (1 July 1976 through 30 June 1977, Acarigua). Activity IL.AV.231
11. Working Meeting on Programming and Implementing Work at Local Levels (April 25-29, 1977, Araure). Activity IL.AV.232
12. Participation in the Inter-American Rural Youth Conference, Held in Venezuela (October 16-23, 1976, Caracas). Activity II.NZ.213
4. Strengthening FONAIAP in Socio-economic Research Aspects (1 July 1976 through 30 June 1977, Maracay). Activity III.AV.114
5. Collaboration provided FONAIAP on the Definition of Agricultural Research Priorities (1 July 1976 through 30 June 1977). Activity III.AV.115
6. Collaboration provided FONAIAP for the National Seminar on the Use of Statistical-Economic Techniques in Surface Response, in Research (November 25 to December 11, 1976, Maracay). Activity III.AV.116
7. Participation in the Agricultural Research Planning Course (November 6 to December 3, 1976, Mérida). Activity III.AV.118
8. I Scientific Communications Course (July 26-30, 1976, Maracay). Activity III.AV.119
9. II Scientific Communications Course (August 2-6, 1976, Araure). Activity III.AV.1110
10. III Scientific Communications Course (August 9-13, 1976, El Guayabo). Activity III.AV.1111
11. Participation in the Introductory Course on the Diagnosis of Natural Resources (February 1976, Maracay). Activity III.AV.

Line IV: Fostering Agricultural Production

Line III: Agricultural Research

1. Collaboration provided FONAIAP on the Revision and Adjustment of a Short-term Agricultural Research Plan (August to September 1976, Acarigua, Caracas and Maracay). Activity III.AV.111
2. Collaboration provided FONAIAP on the Design of its Annual Operative Program (October 1976 through June 1977, Maracay, Caracas and Maturín). Activity III.AV.112
3. Consultation Meeting for the Analysis, Revision and Adjustment of the Annual Operative Plan and the Short-term Agricultural Research Plan (December 1976, Acarigua). Activity III.AV.113
1. Provision of Advisory Services to the National Sectoral Planning Office of the Ministry of Agriculture and Livestock (1 July 1976 through 30 June 1977, Caracas). Activity IV.AV.411
2. Advisory Services provided the Technical Management Office of the Agricultural Marketing Corporation (1 July 1976 through 30 June 1977, Caracas). Activity IV.AV.412
3. Course on Agricultural Marketing Organizations for Farmers (February 28 to March 12, 1977, Mérida). Activity IV.AV.416
4. Support provided the Marketing Information Service (1 July 1976 through 30 June 1977, Caracas). Activity IV.AV.417
5. IV National Meeting on Marketing Instruments: Farming Organizations and Marketing (May 23-27, 1977, Maracaibo). Activity IV.AV.418
6. Support provided the Storage Centers Project of Pueblo Llano (November 1976 to June 1977, Caracas and Pueblo Llano). Activity IV.AV.419
7. Cooperation provided on the Formation of a Storage Centers Program for the Agricultural Marketing Corporation (November 1976 to June 1977, Caracas). Activity IV.AV.4110

Line VI: Fostering and Implementing Structural Change

1. Advisory Services provided the National Agrarian Institute (IAN), on the Design of an Agrarian Reform Planning System (July to October 1976, Caracas). Activity VI.AV.111
2. Advisory Services and Support provided IAN on Carrying Out Cadastral Surveys (1 July 1976 through 30 June 1977, Caracas). Activity VI.AV.112
3. Advisory Services and Direct Support provided IAN on Appraisals (1 July 1976 through 30 June 1977, Caracas). Activity VI.AV.114
4. Seminar on Rural Cadastral Surveying (January 10-14, 1977, Caracas). Activity VI.AV.116
5. Training in Agrarian Tribunals (Caracas). Activity VI.AV.118
6. Participation on the Design and Preparation of a Medium-term Agrarian Reform Plan (October 1976 through June 1977, Caracas). Activity VI.AV.119
7. Evaluation of "Campesino" Economic Enterprises (December 1976 through June 1977, Acarigua). Activity VI.AV.211
8. Provision of Advisory Services to the Animal Husbandry Office/Agricultural Development, on "Campesino" Enterprise Management Aspects (March through June 1977, Portuguesa and Yaracuy). Activity VI.AV.212
9. Working Meeting on Coordinating Actions, Favoring "Campesino" Enterprises (June 21-23, 1977, Acarigua). Activity VI.AV.213

Line VII: Administration of Agricultural Policy

1. Collaboration provided the Planning Office of the Ministry of Agriculture and Livestock on the Preparation of Annual Operative Programs (1 July 1976 through 30 June 1977, Caracas). Activity VII.AV.111
2. Collaboration provided on the Evaluation of Agricultural Production Programs in the Zuliana Region (1 July 1976 through 30 June 1977, Maracaibo). Activity VII.AV.112
3. Collaboration provided the Agricultural Planning Office of the Agricultural Development Division, Ministry of Agriculture, on Evaluation (November 1976 through June 1977, Caracas). Activity VII.AV.113
4. Participation and Advisory Services provided on the Programming of Training, Technical Assistance, Research and Production Infrastructure Activities of Project MAC/76-1 (1 July 1976 through 30 June 1977, Zulia, Western Central and Northeastern Regions). Activity VII.AV.211
5. Participation and Advisory Services provided on the Supervision and Control of Training, Technical Assistance and Research Activities of Project MAC/76-1 (August 1976 through May 1977). Activity VII.AV.212
6. Participation and Advisory Services on the Evaluation of Project MAC/76-1 (January to March 1977, Acarigua). Activity VII.AV.213
7. Advisory Services provided on Integrated Production Systems for the Tropics (October 4-6, 1976, Caracas and Caucagua). Activity VII.AV.412

MULTINATIONAL ACTIVITIES

Line I: Analysis and Information for Rural Development

1. Coordination of Activities of the Regional Advisory Groups of PIADIC (1 July 1976 through 30 June 1977, Central American Isthmus). Activity I.NZ.411
2. Coordination of the Activities of the National Coordinating Committees of PIADIC, at a Regional Level (1 July 1976 through 30 June 1977, Central American Isthmus). Activity I.NZ.412
3. Organization and Direction of Training Actions at the Regional Level on the Generation and Utilization of Socio-economic Research and Marketing Information (1 July 1976 through 30 June 1977, Central American Isthmus). Activity I.NZ.413
4. Cooperation provided the Directors of IICA Country Offices with the aim of ensuring that their Actions Attain the Goals and Objectives of National Projects (1 July 1976 through 30 June 1977, Central American Isthmus). Activity I.NZ.417
5. Preparation and Updating of Diagnostic Studies and Country-level Actions Plans (1 July 1976 through 30 June 1977, Andean Zone countries). Activity I.AZ.111
6. Technical Coordination Mission for the Incorporation of the Countries of the Antilles Zone into AGRINTER and AGRIS-Latin America, at the Policy Decision level (August 8-29, 1976, Antilles Zone countries). Activity I.D.317
7. Production and Diffusion of a Film about AGRINTER (September to October 1976, Colombia and Costa Rica). Activity I.D.383
8. Promotion and Coordination of PIADIC (1 July 1976 through ne 1977, Central American Isthmus). Activity I.D.411
9. Preparation of Manuals and Guidelines for Handling Agricultural Information (1 July 1976 through 30 June 1977, Central American Isthmus). Activity I.D.413
10. Revision of the Manual on Methodologies for Developing Agricultural Technological Packages and the Preparation of at least Five ATP's (1 July 1976 through 30 June 1977, Central American Isthmus). Activity I.D.414
11. Support provided the Northern Zone on the Establishment of National Agricultural Information Sub-systems throughout the Central American Isthmus, including their possible integration to AGRINTER (1 July 1976 through 30 June 1977, Central American Isthmus). Activity I.D.416

12. Support provided on the Production of National Agricultural Bibliographies throughout the Central American Isthmus (1 July 1976 through 30 June 1977, Central American Isthmus). Activity I.D.419
13. Participation in the Annual Programming Meeting of the Regional Office for the Southern Zone (June 1977, Paraguay and Uruguay). Activity I.SP.114
14. Training of two technicians in Information and Documentation (April to June 1977, Argentina and Uruguay). Activity I.SP.212
15. Assistance provided on Meetings for Planning and Coordinating Projects (February 24-25, May 23-25 and June 13-18, 1977, Costa Rica, Honduras and Guatemala). Activity I.NH.112
16. In-service training for Personnel in Agricultural Information and Documentation (November to December 1976, Brazil and Guatemala). Activity I.NH.418
17. Upgrading the Programming and Evaluation of IICA Activities in Mexico (1 July 1976 through 30 June 1977, Guatemala and Mexico). Activity I.NM.112
18. Programming Meeting of the Northern Zone (January, February, March and June, 1977, Central American Isthmus). Activity I.NCR.112
7. Analysis of the Agricultural Research Situation in the Antilles (1 July 1976 through 30 June 1977, Haiti, Jamaica and the Dominican Republic). Activity III.LZ.111
8. Cooperation provided the National Agricultural Research Agencies, at a Zonal Level, on Planning Activities and Training Technical Personnel (1 July 1976 through 30 June 1977, Haiti, Guyana and Dominican Republic). Activity III.LZ.112
9. Technical Cooperation provided on the Design of INTA's Organizational Structure (1 July 1976 through 30 June 1977, Ecuador and Nicaragua). Activity III.LN.111
10. Provision of Advisory Services on the Organization of Training Courses for Extension Personnel and Farmers (March 1976 to June 1977, Argentina and Uruguay). Activity III.SU.113
11. In-service Training in Animal Husbandry Research (April 11-22 and June 16-24, 1977, Costa Rica and Panama). Activity III.NP.113
12. Analysis of Agricultural Research in Venezuela (August 1976 to March 1977, Colombia and Venezuela). Activity III.AV.117

Line IV: Fostering Agricultural Production

Line III: Agricultural Research

1. Analysis of the Use of Integral Research Methodologies in the countries of the Andean Zone (July 1976 through June 1977, Andean Zone countries). Activity III.AZ.211
2. Support provided on the Zoning Study of the Grassland Areas of the High Andes in Bolivia and Peru (September 1976 to April 1977, Bolivia and Peru). Activity III.AZ.311
3. Collaboration on the XXII and XXIII Meetings of the PCCMCA (July 1976 through May 1977, Central American Isthmus). Activity III.NZ.211
4. Collaboration provided on the Planning and Implementation of Regional Trials (1 July 1976 through 30 June 1977, Central American Isthmus). Activity III.NZ.212
5. Support provided on the Exchange of Agricultural Researchers and Experimental Material between the countries of the Southern Zone (1 July 1976 through 30 June 1977, Southern Zone countries). Activity III.SZ.212
6. Coordination of Research Activities in the Zone. Attendance at Meetings and Conferences as related to the Secretariat of the World Association of Animal Production (1 July through 30 June 1977, Southern Zone countries). Activity III.SZ.313
1. Support provided on the exchange of Technicians and Reciprocal Training Actions, to make the most of Solutions found in Countries with Similar Problems, on the Conservation and Management of Land and Waters (1 July 1976 through 30 June 1977, Brazil and Mexico). Activity IV.SZ.211
2. Compiling and Disseminating Information about the Current Legal Provisions and Regulations in Latin American Countries on the Conservation and Management of Watersheds (1 July 1976 through 30 June 1977, IICA Member States). Activity IV.SZ.213
3. Diagnostic Study of Post-harvest Problems and Guidelines for Institutional Solutions (February to June 1977, Central American Isthmus and Mexico). Activity IV.NZ.911
4. In-service Training on the Organization and Administration of Irrigation Districts (1 July 1976 through 30 June 1977, Mexico and Peru). Activity IV.NCR.212
5. In-service Training for CENTA-El Salvador Researchers (August 1976 to March 1977, Colombia, Costa Rica, Guatemala, Peru and Puerto Rico). Activity IV.NS.319
6. Marketing Training at the Executive Level, for the Marketing Director and Programming Head of the Marketing Office, Food Ministry, Peru (April 17-30, 1977, Colombia, Costa Rica and Mexico). Activity IV.AP.414
7. Reprinting of Information Material about the Coffee Rust Disease (1 July 1976 through 30 June 1977, El Salvador and Nicaragua). Activity IV.NN.614

Line V: Multinational Integration

1. Cooperation provided SIECA on the Analysis of the Program to Foster Production in El Salvador, as a Function of the Regional Action Plan Objectives for the Production and Supply of Basic Grains (November 1976 to June 1977, Central American Isthmus). Activity V.NZ.111

Line VI: Fostering and Implementing Structural Change

1. Survey of "Campesino" Associative Enterprises throughout the Central American Isthmus (1 July 1976 through 30 June 1977, Central American Isthmus). Activity VL.NZ.114
2. Publication and Distribution of Agrarian Reform Material (1 July 1976 through 30 June 1977, Central American Isthmus). Activity VL.NZ.115
3. Direction and Administration of PRACA (1 July 1976 through 30 June 1977, Central American Isthmus). Activity VL.NZ.116
4. Compiling Theoretical and Empirical Information on Rural Development Strategies for Developing Countries in the Americas (July 1976 through June 1977, Colombia, Haiti, Mexico, Nicaragua and Panama). Activity VI.AZ.312
5. Reciprocal Training in Cadastral Surveying and Appraisals of Rural Farms (July 1976, Colombia and Venezuela). Activity VLNP.114
6. Preparation of an Agrarian Reform Seminar for the Andean Pact (June 7-17. Bolivia, Ecuador and Peru). Activity VI.AC.115

Line VII: Administration of Agricultural Policy

1. Reciprocal Training (July and December 1976, Colombia, Ecuador, Panama, Peru and Venezuela). Activity VII.NZ.111
2. Provision of Advisory and Training Services on the Evaluation of Agricultural Credit Projects of the Animal Husbandry Agency and the National Promotion Bank (1 August 1976 through 30 June 1977, Argentina, Paraguay and Uruguay). Activity VII.SP.115
3. Support provided the Animal Husbandry Programming Unit on its SELA Actions (February to March 1977, Colombia and Venezuela). Activity VII.AC.117
4. Reciprocal Training in the Development of the Tropics (August to September 1976, Brazil and Peru). Activity VII.AC.413
5. Information and Consultants for Budget Unit Directors, on Decisions concerning the Five-year Plan and its Incorporation into the Country-level Actions Plans in the 1977-78 Operative Program (November 1976, Guatemala, Peru, Dominican Republic and Uruguay). Activity VII.P.5115

6. Summary of Modifications in the 1976-77 Operative Program as presented by the Regional Offices as a result of the Mid-year Reprogramming of the Budget (February 1977, IICA Member States). Activity VII.P.5118
7. Revision of 1977-78 Operative Program Proposals, at Country-level Programming Meetings (February 1977, IICA Member States). Activity VII.P.5119
8. Analysis of the Recommendations for the Five-year Plan and their incorporation into the 1977-78 Operative Program (February 1977, IICA Member States). Activity VII.P.5120
9. Collaboration provided the Director General and Regional Directors on the Presentation of the 1977-78 Program-Budget and the Five-year Plan to pertinent national authorities (March 1977, Guatemala, Peru, Dominican Republic, Uruguay and Washington). Activity VII.P.5121
10. Analysis and Approval of the 1977-78 Operative Program for all IICA Units, as per Decisions taken by the Board of Directors and Recommendations made at February Programming Meetings (June 1977, Guatemala, Peru, Dominican Republic and Uruguay). Activity VII.P.5125
11. Provision of Advisory Services to Institute Units on the Formulation of preliminary Drafts of the 1978-79 Program-Budget, at the Project level (June 1977, Guatemala, Peru, Dominican Republic and Uruguay). Activity VII.P.5126
12. Evaluation of Programs as Indicated by the Board of Directors: Programs IV.4 and VI.1, and the Presentation of the Respective Reports to the Board of Directors (October 1976 to May 1977, Costa Rica, Dominican Republic and others). Activity VII.P.522

SUPPORT ACTIVITIES

ARGENTINA

1. Technical Coordination Mission for the Participation of Argentina in AGRINTER and AGRIS/LAC, at a Policy-decision Level (August 1976)
2. Support provided on the Operation of the National Agricultural Sciences Information System - SNICA (1 July 1976 through 30 June 1977)

BARBADOS

1. Technical Coordination Mission for the Participation of Barbados in AGRINTER and AGRIS/LAC, at a Policy-decision Level (1 July 1976 through 30 June 1977)

BOLIVIA

1. Technical Coordination Mission for the Participation of Bolivia in AGRINTER and AGRIS/LAC, at a Policy-decision Level (November 1976)

2. Support provided on Fostering and Introducing Strategies for the Creation of a National Agricultural Information Sub-system in Bolivia
(1 July 1976 through 30 June 1977)
3. Support provided a National Meeting of Agricultural Librarians and Documentalists of Bolivia
(August 1976)

BRAZIL

1. Technical Coordination Mission for the Participation of Brazil in AGRINTER and AGRIS/LAC, at a Policy-decision level
(August 1976)
2. Support provided on the Operation of a National Rural Information System – SNIR
(1 July 1976 through 30 June 1977)

COLOMBIA

1. Technical Coordination Mission for the Participation of Brazil in AGRINTER and AGRIS/LAC, at a Policy-decision level
(August 1976)
2. Support provided on the Operation of a National Agricultural Sciences Information System in Colombia – SNICA
(1 July 1976 through 30 June 1977)
3. Support provided on a National Course for Agricultural Librarians
(March to April 1977)

CHILE

1. Technical Coordination Mission for the Participation of Chile in AGRINTER and AGRIS/LAC, at a Policy-decision Level
(August 1976)
2. Support provided on the Operation of a National Agricultural and Forestry Documentation and Information Sub-system
(1 July 1976 through 30 June 1977)
3. Support provided on a Course to Up-grade Agricultural and Forestry Information
(August to September 1976)

DOMINICAN REPUBLIC

1. Technical Coordination Mission for the Incorporation of the Dominican Republic in AGRINTER and AGRIS/LAC, at a Policy-decision Level
(August 1976)
2. Support provided on Fostering and Introducing Strategies for Planning a National Agricultural Information Sub-system
(July 1976)
3. Support provided on a National Agricultural Information and Documentation Seminar
(August 1976)

ECUADOR

1. Technical Coordination Mission for the Participation of Ecuador in AGRINTER and AGRIS/LAC, at a Policy-decision Level
(September 1976)

2. Support provided on Introducing Strategies for the Creation and Establishment of an Agricultural Information Sub-system in Ecuador
(1 July 1976 through 30 June 1977)

GUADALUPE

1. Technical Coordination Mission for the Participation of Guadalupe in AGRINTER and AGRIS/LAC, at a Policy-decision Level
(August 1976)

GUYANA

1. Technical Coordination Mission for the Participation of Guyana in AGRINTER and AGRIS/LAC, at a Policy-decision Level
(August 1976)
2. Support provided on Fostering and Introducing Strategies for Planning a National Agricultural Information Sub-system
(1 July 1976 through 30 June 1977)

HAITI

1. Technical Coordination Mission for the Participation of Haiti in AGRINTER and AGRIS/LAC, at a Policy-decision Level
(August 1976)
2. Support provided on Fostering and Introducing Strategies for Planning a National Agricultural Information Sub-system
(July 1976)

JAMAICA

1. Technical Coordination Mission for the Participation of Jamaica in AGRINTER and AGRIS/LAC, at a Policy-decision Level
(August 1976)
2. Support provided on Fostering and Introducing Strategies for Planning a National Agricultural Information Sub-system
(July 1976)

MEXICO

1. Technical Coordination Mission for the Participation of Mexico in AGRINTER and AGRIS/LAC, at a Policy-decision Level
(October 1976)
2. Support provided on Fostering and Introducing Strategies for Planning a National Agricultural Information Sub-system
(1 July 1976 through 30 June 1977)
3. Participation in a Series of Conferences at the Library Sciences College of the National Autonomous University of Mexico
(October 1976)

PARAGUAY

1. Technical Coordination Mission for the Participation of Paraguay in AGRINTER and AGRIS/LAC, at a Policy-decision Level
(November 1976)
2. Support provided on Fostering and Introducing Strategies for Planning and Creating a National Agricultural and Forestry Documentation and Information Sub-system
(1 July 1976 through 30 June 1977)

PERU

1. Technical Coordination Mission for the Participation of Peru in AGRINTER and AGRIS/LAC, at a Policy-decision Level (October to December 1976)
2. Conducting a Diagnostic Study of the Situation in the Agricultural Information Sub-system of Peru (October to December 1976)
3. Support provided on Fostering and Introducing Strategies for Creating a National Agricultural Information Sub-system in Peru (1 July 1976 through 30 June 1977)
4. Support provided on Training an Agricultural Information Specialist (March to April 1977)

TRINIDAD AND TOBAGO

1. Technical Coordination Mission for the Incorporation of Trinidad and Tobago in AGRINTER and AGRIS/LAC, at a Policy-decision Level (1 July 1976 through 30 June 1977)

URUGUAY

1. Technical Coordination Mission for the Incorporation of Uruguay in AGRINTER and AGRIS/LAC, at a Policy-decision Level (November 1976)
2. Support provided on Fostering and Introducing Strategies for Planning a National Agricultural Information System (1 July 1976 through 30 June 1977)

VENEZUELA

1. Technical Coordination Mission for the Incorporation of Venezuela in AGRINTER and AGRIS/LAC, at a Policy-decision Level (October 1976)
2. Support provided on the Operation of a National Agricultural Sciences Information Sub-system - SININCA (1 July 1976 through 30 June 1977)
3. Support provided on Training in AGRINTER and AGRIS Methodologies (March 1977)
4. Support provided on a Training Workshop for SININCA Users (November 1976)

OTHER ACTIVITIES AND SERVICES

PUBLIC INFORMATION

1. Fostering and Upgrading Information at National, Regional and Hemispheric Levels, back-stopping the Respective National and Regional Units (1 July 1976 through 30 June 1977, San José). Activity 19.0.111
2. Fostering and Upgrading Information for Local and International Press (1 July 1976 through 30 June 1977, San José). Activity 19.0.112

3. Collaboration with the Different IICA Units on the Design, Editing and Publication of their Work (1 July 1976 through 30 June 1977, San José). Activity 19.0.113
4. Design, Writing, Editing and Publication of the 1976 Annual in Report English and Spanish (September to December 1976, San José). Activity 19.0.114
5. Design, Editing and Publication of No. 11 of the Official Documents Series (Resolutions and Documents of the Fifteenth Annual Meeting of the Board of Directors) in Spanish and English (July and August 1976, San José). Activity 19.0.115
6. Design, Editing and Publication of Report Covers and Chapter Headings for the Sixteenth Annual Meeting of the Board of Directors and the Twenty-second Meeting of the Technical Advisory Committee (April 1977, San José). Activity 19.0.116
7. Design, Editing and Publication of the Brochure "1976 Inter-American Agricultural Medal", in Spanish and English (October 1976, San José). Activity 19.0.117
8. Design, Editing and Publication of the brochure "1976 Hemispheric and Humanistic Projection" in English and Spanish (September to October 1976, San José). Activity 19.0.118
9. Writing up, Editing, Design and Publication of four numbers of the Trimestral Bulletin "IICA in the Americas" (1 July 1976 through 30 June 1977, San José). Activity 19.0.119
10. Design, Editing and Publication of the Proceedings of the Regional Consultation Meeting on Agricultural Research, in Panama - in English and Spanish (August 1976, San José). Activity 19.0.1110
11. Design, Editing and Publication of the Proceedings of the V Meeting of Agrarian Reform Executives, in Paraguay (August 1976, San José). Activity 19.0.1111
12. Design, Editing and Publication of a Directory of IICA Professionals for 1976-77 (August to September 1976, San José). Activity 19.0.1112
13. Editing and Publication of the Report on Project 206 (November 1976, San José). Activity 19.0.1113
14. Preparation of the Report for the OAS General Secretariat on IICA Activities (December 1976, San José). Activity 19.0.1114
15. Preparation of the Message from the Director General (March 1977, San José). Activity 19.0.1115
16. Preparation of Speeches and other Papers for the Director General (1 July 1976 through 30 June 1977, San José). Activity 19.0.1116
17. Organization, Preparation and Implementation of the Documents Secretariat of the Meetings of the Special Committee, Board of Directors and Technical Advisory Council (October 1976 through May 1977, Costa Rica and the Dominican Republic). Activity 19.0.1117

18. **General Secretariat of the Technical Advisory Council of IICA**
(1 July 1976 through 30 June 1977, San José). Activity 19.0.1118
19. **Maintenance of a Photographic File at the General Directorate**
(1 July 1976 through 30 June 1977, San José). Activity 19.0.1119
20. **Maintenance of a Journalistic Information File on IICA**
(1 July 1976 through 30 June 1977, San José). Activity 19.0.1120
21. **Translation of Official Documents into English**
(1 July 1976 through 30 June 1977, San José). Activity 19.0.1121
22. **Supervision, Programming and Implementation of Printing Work at IICA's Printshop**
(1 July 1976 through 30 June 1977, San José). Activity 19.0.1122
23. **Visits and Contacts with the Regional and Country Offices to Implement IICA's Public Information Hemispheric Policy**
(1 July 1976 through 30 June 1977, Argentina, Bolivia, Paraguay and Peru). Activity 19.0.121
24. **Coordination with the Directors of Information of the Specialized Agencies of the Inter-American System on Public Information Aspects**
(1 July 1976 through 30 June 1977, San José). Activity 19.0.122
25. **Permanent Contact with the Communications Media, at National and International Levels, through the different IICA Units**
(1 July 1976 through 30 June 1977, San José). Activity 19.0.123
26. **Promoting the Teaching Texts and Materials Series, at the Hemispheric Level, amongst Professors, Researchers and Students of Agriculture**
(1 July 1976 through 30 June 1977, Argentina, Bolivia, Paraguay and Peru). Activity 19.0.124
27. **Editing and Publication of four numbers of the Journal "Turrialba", Vol. 26, Nos. 3 and 4, and Vol. 27, Nos. 1 and 2**
(1 July 1976 through 30 June 1977, San José). Activity 19.0.131
28. **Editing and Publication of three numbers of the Journal "Rural Development in the Americas", Vol. VII, Nos. 1 2 and 3**
(1 July 1976 through 30 June 1977, San José). Activity 19.0.132
29. **Editing the book "Rural Credit"**
(July to September 1976, San José). Activity 19.0.133
30. **Editing the book "Organization and Administration of Agricultural Research" 2nd. Edition**
(July to December 1976, San José). Activity 19.0.134
31. **Editing the book "The Cultivation of Citrus"**
(July 1976 through January 1977, San José). Activity 19.0.135
32. **Editing the book "Soils Mineralogy"**
(July 1976 through February 1977, San José). Activity 19.0.136
33. **Editing the book "Manual on Agricultural Entomology"**
(July to November 1976, San José). Activity 19.0.137
34. **Editing the book "Motors and Tractors"**
(August to December 1976, San José). Activity 19.0.138
35. **Secretariat of the Advisory Committee of the Teaching Texts and Materials Series**
(1 July 1976 through 30 June 1977, San José). Activity 19.0.139
36. **Secretariat of the Editorial Committee of the Journal "Turrialba"**
(1 July 1976 through 30 June 1977, San José). Activity 19.0.1310
37. **Secretariat of the Editorial Committee of the Journal "Rural Development in the Americas"**
(1 July 1976 through 30 June 1977, San José). Activity 19.0.1311
38. **Executive Secretariat of the General Publications Committee of IICA**
(1 July 1976 through 30 June 1977, San José). Activity 19.0.1312
39. **Control and Provision of Advisory Services on the Series "Miscellaneous Publications" and Conference Reports, Courses and Meetings"**
(1 July 1976 through 30 June 1977, San José). Activity 19.0.1313
40. **Reprinting of the book "Introduction to Statistics"**
(October 1976, San José). Activity 19.0.1314
41. **Reprinting of the book "Administration of Agricultural Enterprises"**
(May 1977, San José). Activity 19.0.1315
42. **Reprinting of the book "Cultivating Tropical Root and Tuber Crops"**
(San José). Activity 19.0.1316
43. **Reprinting the book "Repairing Agricultural Motors and Tractors" (3rd. printing)**
(January 1977, San José). Activity 19.0.1317
44. **Editing the book "Life Ecology Zones"**
(January 1977, San José). Activity 19.0.1318
45. **Reprinting the book "Soil Chemistry"**
(January 1977, San José). Activity 19.0.1319
46. **Reprinting the book "Introduction to Phytopathology"**
(January 1977, San José). Activity 19.0.1320
47. **Compiling, Information, Writing up, Design and Publication of 51 numbers of IICA's Internal News Bulletin**
(1 July 1976 through 30 June 1977, San José). Activity 19.0.141
48. **Collaboration on Structuring and Implementing IICA's Internal Information Procedures**
(1 July 1976 through 30 June 1977, San José). Activity 19.0.142

49. **Distribution and Control of Publications from all of IICA's Units**
(1 July 1976 through 30 June 1977, San José). Activity 19.0.143
50. **Provision of Advisory Services to the Technological Institute of Costa Rica on aspects pertaining to Information and Publications**
(July to December 1976, San José). Activity 19.0.151
51. **Provision of Advisory Services to the University of Costa Rica and the National Science and Technology Council, on the Creation of a Scientific Journal**
(1 July 1976 through 30 June 1977, San José). Activity 19.0.152
52. **Advisory Services provided PIADIC (Courses given in Nicaragua, and Preparation of Material)**
(July to December 1976, Costa Rica and Nicaragua). Activity 19.0.153
53. **In-service Training for a Technician of the Department of Information, State Secretariat of Agriculture, Dominican Republic, on Communications and the Preparation of Publications**
(February 1977, San José). Activity 19.0.154
54. **Provision of Advisory Services to the Ministry of Agriculture and Animal Husbandry of Costa Rica, on Information Aspects**
(March 1977, San José). Activity 19.0.155
55. **Course in Technical Writing and Scientific Communication for Students at CATIE**
(March 1977, San José). Activity 19.0.156
56. **Provision of Advisory Services for the Inter-American Courses on Agricultural Documentation of CIDIA**
(April 1977, San José). Activity 19.0.157
57. **Provision of Advisory Service on Agricultural Sciences Information Aspects, to the Inter-American Center for Producing Scientific and Educational Material for the Press (CIMPEC-OEA) in Colombia**
(1 July 1976 through 30 June 1977, San José). Activity 19.0.158
58. **Provision of Advisory Services on Courses and Meetings in Scientific Communications, the Transfer of Technology and Technical Writing**
(1 July 1976 through 30 June 1977, San José). Activity 19.0.159

Appendix II.
NUMBER OF INSTITUTIONS
WITH WHICH IICA COOPERATED
IN THE 1976-77 PERIOD



**NUMBER OF INSTITUTIONS WITH WHICH IICA COOPERATED
IN THE 1976-77 PERIOD**

Country	Number of Institutions
Argentina	61
Bolivia	34
Brazil	95
Colombia	56
Costa Rica	11
Chile	28
Dominican Republic	20
Ecuador	26
El Salvador	16
Guatemala	17
Guyana	2
Haiti	14
Honduras	22
Jamaica	7
Mexico	20
Nicaragua	16
Panama	5
Paraguay	38
Peru	22
Uruguay	8
Venezuela	43
International Agencies	42
National Agencies Abroad	9
	612

Appendix III.
PARTICIPANTS IN IICA ACTIVITIES

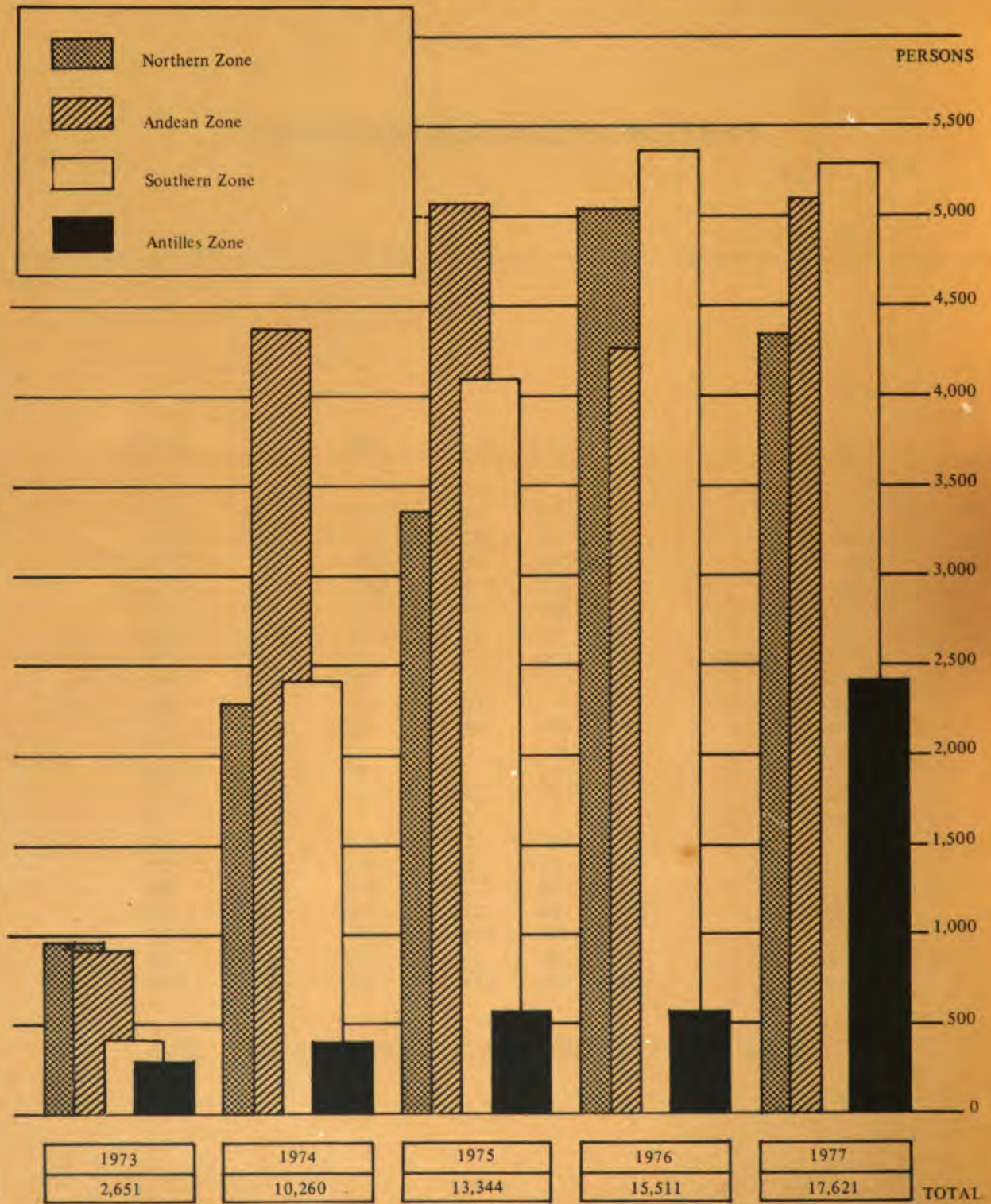


PARTICIPANTS IN IICA ACTIVITIES

Country	1972	1973	1974	1975	1976	1977
Argentina	217	20	541	629	792	1,293
Bolivia	102	74	427	457	787	297
Brazil	432	254	999	1,041	1,797	1,893
Colombia	523	482	1,385	1,219	1,160	2,185
Costa Rica	261	226	745	972	950	390
Chile	471	68	572	2,289	2,511	1,046
Dominican Republic	34	178	325	347	336	1,496
Ecuador	82	17	610	964	552	390
El Salvador	32	—	351	404	175	537
Guatemala	295	258	236	169	286	157
Guyana	—	—	—	—	—	58
Haiti	—	82	157	184	261	917
Honduras	—	77	268	582	2,327	1,938
Jamaica	—	—	—	—	65	69
Mexico	237	281	622	809	663	558
Nicaragua	36	70	61	220	320	112
Panama	126	59	50	250	361	784
Paraguay	74	53	238	232	107	671
Peru	119	175	1,480	1,570	851	1,360
Uruguay	147	56	134	108	198	455
Venezuela	169	221	1,059	898	1,012	1,015
TOTAL	3,357	2,651	10,260	13,344	15,511	17,621

FIGURE 5

PARTICIPANTS IN IICA ACTIVITIES, BY ZONE



Appendix IV.
PUBLICATIONS



PUBLICATIONS

Following is the list of publications by IICA technicians or the results of the cooperative actions of the Institute with national institutions.

The publications are presented in alphabetical order: publications or papers by technicians; proceedings and reports from conferences, meetings and seminars; and periodic publications. The latter include the journals which IICA publishes regularly.

1. AGUDELO, F. Algunos conceptos sobre Manejo Integrado de Plagas. Convenio IICA/SEA/FEDA. Material Didáctico no. 30. 1976.
2. _____. Proyecto de Desarrollo de un Programa Integrado de Plagas en Yuca (*Manihot esculenta* Krantz) en la República Dominicana. Convenio IICA/SEA/FEDA. Documento técnico no. 31. 1976. 11 p.
3. _____. Algunas consideraciones sobre los amarillamientos y mosaicos de la habichuela (*Phaseolus vulgaris* C.) en la República Dominicana. Convenio IICA/SEA/FEDA. Documento técnico no. 40. 1977. 14 p.
4. _____. Reporte del estado fitosanitario de cultivos en la República Dominicana. Convenio IICA/SEA/FEDA. Documento técnico no. 33. 1977. 8 p.
5. ALBINO, L. P. y SALVIATI, M. E. Sistema Nacional de Catalogação e Indexação Automático. Brasília, EMBRAPA/DID, 1977. 50 p.

Documento presentado en el Congreso Brasileiro de Biblioteconomía e Documentação, 9o., Porto Alegre, Brasil, 1977.
6. ALGUNOS FACTORES de manejo en la producción de las gramíneas tropicales. Actividades en Turrialba (Costa Rica) 4(1):3-5. 1976.

Editado también en inglés.
7. ALIBERT, P., DEUSTUA, L., DIAZ, H. y GRAJALES, G. Guía para la identificación de proyectos de inversión en las empresas campesinas asociativas. IICA. Publicación Miscelánea no. 138. 44 p.
8. AMEZQUITA, R. Servicios del Estado para mejorar técnicas de post-cosecha en productos alimenticios. México, D.F., Oficina del IICA en México, 1977.

Documento presentado en el Seminario Latinoamericano sobre Estrategias de Comercialización Rural, San José, Costa Rica, 1977.
9. ANSORENA, I. Marco social de la juventud rural campesina en países de América Latina. In Seminario Nacional sobre Juventudes Rurales, Set. 7-10, 1976. Quito, Ministerio de Agricultura y Ganadería, 1976.
10. ARAUJO, M. A. La situación del pequeño agricultor en Centroamérica (aspectos económicos). Guatemala, IICA, Dirección Regional para la Zona Norte, 1976. 20 p.

Presentado en Iowa State University-IICA Continuing Seminar, San José, Costa Rica, Nov. 1-5, 1976.
11. ARBOLEDA-SEPULVEDA, O. Acceso a la información agrícola: un programa de acción para México. México, D.F., CONACYT, 1976. 96 p.
12. _____. Bases para el establecimiento del Subsistema Nacional de Información Agrícola de República Dominicana. San José, Costa Rica, IICA-CIDIA, 1976. 64 p.
13. _____. La información y documentación agrícola en Haití: visión general. Port-au-Prince, Oficina del IICA en Haití, 1976. 18 p.

Editado también en francés.
14. _____. Fortalecimiento de un Subsistema Nacional de Información Agrícola (SNIA) en República Dominicana. Santo Domingo, Rep. Dominicana, IICA, Coordinación del Plan de Acción en República Dominicana, 1977. 27 p.
15. _____. Los estudios de diagnóstico en el desarrollo de redes de Información Agrícola en América Latina. In Reunión Interamericana de Bibliotecarios y Documentalistas Agrícolas, 4a., México, D.F., Abr. 7-11, 1975. Informe. Turrialba, Costa Rica, AIBDA, 1977. pp. 67-82.
16. _____. Oficina Nacional de Planificación de Costa Rica; Planeamiento para su Centro de Documentación. San José, Costa Rica, IICA-CIDIA, 1977. 17 p. (Documento para discusión).
17. _____. Programa de Educación Continuada en Desarrollo de Sistemas de Información Agrícola. Someterido al Programa de Desarrollo de Bibliotecas y Archivos de la OEA por el IICA-CIDIA. San José, Costa Rica, IICA-CIDIA, 1977. 10 p.
18. _____. Propuesta de capacitación para fortalecer los Sistemas Nacionales de Información Agrícola. Proyecto de Educación Continuada en Desarrollo de Sistemas de Información Agrícola; IICA-CIDIA Programa de Desarrollo de Bibliotecas y Archivos de la OEA. San José, Costa Rica, IICA-CIDIA, 1977. 14 p.

19. _____. Una visión general de la documentación e información agrícola en los países de la Zona de las Antillas. San José, Costa Rica, IICA-CIDIA, 1977. 19 p.
20. ARIAS, C. L. La redacción y presentación de informes. Guatemala, IICA, Dirección Regional para la Zona Norte. s.p.
21. AZAEL, A. Document pour servir de guide a l'organisation institutionnelle du Centre National de Semences Améliorées (CENASAM). Port-au-Prince, Bureau de l'IICA en Haiti.
22. BAILON, G. *et al.* Aspectos genéticos del crecimiento del ganado de carne en el trópico. ALPA Memoria 11:40-41. 1976. (Compendio).
23. BAZAN, O. *et al.* Comportamiento reproductivo de ganado de carne en Costa Rica. ALPA Memoria 11:52. 1976. (Compendio).
24. BAZAN, R. Programa de investigación en sistemas de producción agrícola para el pequeño agricultor en América Central. Turrialba, Costa Rica, CATIE, 1976. 14 p.
25. _____. Estado del proyecto de sistemas de producción para pequeños agricultores en El Salvador. *In* Reunión Internacional de Colaboración Técnica CATIE-CIAT-CIMMYT-IICA, Turrialba, Costa Rica, Jun. 2-3, 1977. Turrialba, Costa Rica, CATIE, 1977. 5 p.
26. _____. Estado del proyecto de sistemas de cultivo para pequeños agricultores en Guatemala. *In* Reunión Internacional de Colaboración Técnica CATIE-CIAT-CIMMYT-IICA, Turrialba, Costa Rica, Jun. 2-3, 1977. Turrialba, Costa Rica, CATIE, 1977. 8 p.
27. _____. Los paquetes tecnológicos, su preparación y utilización en la agricultura. Turrialba, Costa Rica, CATIE, 1977. 8 p.
28. BLASCO, M. La programación de la Investigación para el Desarrollo Agrícola. *In* Seminario Regional Andino sobre Educación Agraria Superior, 10., Lima, 1977. Lima, Universidad Nacional Agraria La Molina, 1977. p. irr.
29. BLASCO LAMENCA, M. *et al.* Producción e investigación agraria en la Amazonía Peruana. IICA. Publicación Miscelánea no. 160. 1977. 82 p.
30. _____. Síntesis de la investigación agrícola en la Zona Andina 1977. IICA. Publicación Miscelánea no. 161. 1977. 43 p.
31. BUDOWSKI, G. A strategy for saving wild plants (in light of the experience in Central America countries). Turrialba, Costa Rica, CATIE, 1976. 8 p.

Presentado en el Bicentennial Symposium on Threatened and Endangered Species of Plants in the Americas and their significance in Ecosystems Today and in the Future, New York, 1976.
32. _____. La conservación del medio ambiente: conflicto o instrumento para el desarrollo. Ciencia Interamericana 17(1):2-8. 1976.
33. _____. La juventud rural, semilla del desarrollo. Turrialba, Costa Rica, CATIE, 1976. 8 p.

Documento presentado en la Conferencia Interamericana de Juventudes Rurales, Caracas, Oct., 1976.
34. _____. Los recursos naturales en el desarrollo del trópico húmedo. Turrialba, Costa Rica, CATIE, 1976. 8 p.

Documento presentado en la Reunión sobre Desarrollo Regional del Trópico Americano (IICA-TROPICOS), Belém, Brasil, 1976.
35. _____. Población y recursos naturales. Turrialba, Costa Rica, CATIE, 1976. 9 p.

Documento presentado en la Reunión sobre Demografía en Costa Rica, Heredia, 1976.
36. _____. The global problems of conservation and the potential role of living collections. *In* Simmons, J. B., *et al.* ed. Conservation of the threatened plants. London, Plenum Press, 1976. pp. 9-13.
37. _____. Agro-forestry in the humid tropics: a programme of work. Report submitted to IDRC. Turrialba, Costa Rica, CATIE, 1977. 24 p.
38. _____. Los bosques de Costa Rica y la futura disponibilidad de madera. San José, Universidad de Costa Rica, Facultad de Ingeniería, 1977. 4 p.
39. _____. Turismo y conservación ambiental: conflicto, coexistencia o simbiosis. Parques 1(4):3-6. 1977.

Editado también en inglés y francés.
40. BURGOS, C. Descripción de los sistemas de cultivo y algunas características de los agricultores de Guápiles, Pococí, Costa Rica. *In* Reunión Internacional de Colaboración Técnica CATIE-CIAT-CIMMYT-IICA, Turrialba, Costa Rica, Jun. 2-3, 1977. Turrialba, Costa Rica, CATIE, 1977. 22 p.
41. CABALLERO, H., FERGUSON, W. y HABIT, M. Proposiciones sobre redes de investigación en principales problemas de producción y salud animal, con énfasis en ganado de carne y leche. *In* Consulta de Expertos en Investigación Agrícola en América Latina, Panamá, 1975. Panamá, 1976. pp. 153-159.

Informe de la reunión organizada por FAO en colaboración con el IICA.
42. CABALLERO O., H. *et al.* Sistemas de producción de carne bovina con razas de doble propósito en Chile; aspectos técnicos y económicos. IICA. Publicación Miscelánea no. 137. 1976. 149 p.

Co-autores: T. Goldenberg V., H. Benedetti R. y G. Cubillos O.
43. _____. Relating graduate training to needs of students returning to countries of less developed technology. *Journal of Animal Science*. 1977. (En prensa).
44. CABALLERO, W. Introducción a la estadística. IICA. Libros y Materiales Educativos no. 28. 1977. 289 p. (1a. reimp.).

45. CACERES RAMOS, H. Avances del AGRINTER: informe anual del IICA-CIDIA, nov. 1975-oct. 1976. *In* Mesa Redonda del Sistema Interamericano de Información para las Ciencias Agrícolas, 8a., Brasilia, 1976. San José, Costa Rica, IICA, 1976. 31 p.
46. CANAHUA, A. Producción de quinua en Juliaca. IICA-Fondo Simón Bolívar-PUNO-PERU. Proyecto Quinua. Boletín técnico no. 9. 1977.
47. CARDOZO, A. Origen y filogenia de los camélidos sudamericanos. La Paz, Academia Nacional de Ciencias de Bolivia, 1975. 118 p.
48. _____. Conquistas logradas en la investigación y producción de la quinua. Desde El Surco (Ecuador) no. 13:4-5. 1976.
49. _____. La quinua y los requisitos como alimento animal. *In* Reunión Binacional sobre Planificación de la Producción de Quinua, Pasto, Colombia, Jul. 28-30, 1976. Memorias. Bogotá, Instituto Colombiano de Bienestar Familiar, 1976. pp. 70-79.
50. _____. Los páramos y las llamas. El Agro (Ecuador) 21(3):28, 30. 1976.
51. _____. Bibliografía de los camélidos sudamericanos. Jujuy, Argentina, Universidad Nacional, 1977. 95 p.
52. _____. El factor nutricional en el desarrollo ganadero. Bogotá, Oficina del IICA en Colombia, 1977. 24 p.

Documento presentado al Seminario sobre Alimentación de Rumiantes con Forrajes, organizado por la Asociación Colombiana de Producción Animal, Mayo 11-13, 1977.
53. _____. El usuario en el sistema de información agrícola. Bogotá, Oficina del IICA en Colombia, 1977. 13 p.
54. _____ y SALAZAR, J. J. Importancia de los bovinos criollos. Desde El Surco (Ecuador) no. 14:4-6. 1977.
55. _____ y SALAZAR, J. J. La producción animal en algunas unidades familiares usuarias de crédito en Nariño (Colombia). Bogotá, Oficina del IICA en Colombia, 1977. 23 p.

Documento presentado al Seminario sobre Producción Animal en Areas de Agricultura Tradicional, Pasto, Colombia, Mayo 30-Jun. 1, 1977.
56. _____. Proposiciones para orientar la investigación agrícola en la Universidad. Versión preliminar. Pasto, Colombia, 1977. 14 p.
57. CARRILLO LIZ, A. y GONZALEZ ROMERO, V. Esquema de muestreo para la roya del café en Nicaragua. IICA. Publicación Miscelánea no. 157. 1977. 25 p.
58. CASSALETT, C. y PEREZ-DUVERGE, R. Variedades dominicanas de maíz y su importancia en el proceso de selección. Investigación (Rep. Dominicana) 4(2):5-6. 1977.
59. CASTRONOVO, A. Guía de ejecución del Proyecto Integral de Educación Rural en Haití. Port-au-Prince, Bureau de IICA en Haití. s.p.
60. CATEGORIAS DE materias, edición revisada preparada por Ingrid Perciballi. Traducción de las Categorías del AGRIS para uso del AGRINTER. IICA. Documentación e Información Agrícola no. 37. 1977. 42 p.
61. CENTRO AGRONOMICO TROPICAL DE INVESTIGACION Y ENSEÑANZA. Informe de la encuesta preliminar a pequeños agricultores hecha en la región del Pacífico Sur, Costa Rica. Turrialba, Costa Rica, 1976. 15 p.
62. _____. Informe resumido de la encuesta preliminar en Costa Rica, Nicaragua y Honduras. Turrialba, Costa Rica, 1976. 23 p.
63. _____. Primer informe anual, Contrato AID 596-153-CATIE-ROCAP: sistemas de cultivo para pequeños agricultores. Turrialba, Costa Rica, 1976. 30 p.

Editado también en inglés.
64. _____. Primer informe de la encuesta preliminar a pequeños agricultores, efectuada en las áreas de Yojoa (Depto. Cortés) y Guaymas (Depto. Yoro), Honduras. Turrialba, Costa Rica, Proyecto CATIE/ROCAP/MRN-Honduras, 1976. 9 p.
65. _____. Primer informe de la encuesta preliminar a pequeños agricultores efectuada en las regiones de Guayabo (Provincia de Cartago) e Itiquís (Provincia de Alajuela), Costa Rica. Turrialba, Costa Rica, 1976. 34 p.
66. _____. Primer informe de la encuesta preliminar a pequeños agricultores, efectuada en las regiones de San Ramón y La Trinidad, Nicaragua. Turrialba, Costa Rica, Proyecto CATIE/ROCAP/MAG-Nicaragua, 1976. 32 p.
67. _____. Primer informe de la encuesta preliminar a pequeños agricultores, efectuada en los distritos de Cariari y Guácimo, Provincia de Limón, Costa Rica. Turrialba, Costa Rica, 1976. 34 p.
68. _____. Summaries of dissertations done at CATIE on cropping systems. Turrialba, Costa Rica, 1977. 33 p.
69. CHILE. MINISTERIO DE AGRICULTURA, CHILE. MINISTERIO DE OBRAS PUBLICAS E INSTITUTO INTERAMERICANO DE CIENCIAS AGRICOLAS. Reglamento funcional para el Distrito de Riego Digua-Parral. Santiago, Oficina del IICA en Chile, 1976. 48 p.
70. CLIFFORD, R. A. Las variables sociales en la planificación para el desarrollo rural. Guatemala, IICA, Dirección Regional para la Zona Norte. s.p.
71. CORRALES, L. y ROJAS, M. E. DE. Análisis del desarrollo rural e institucional de Honduras, 1975. Documento de trabajo. Tegucigalpa, Oficina del IICA en Honduras, 1977. 183 p.
72. CUBILLOS, G. Manejo de praderas de gramíneas en los Trópicos húmedos. *In* Conferencia Anual sobre Ganadería y Avicultura, 11a., Gainesville, Fla., Mayo, 1977. Proceedings. Gainesville, Universidad de Florida, 1977. pp. A-29-A-32.

73. CUSICANQUI, J. y ARBOLEDA-SEPULVEDA, O. Servicio de Información y Documentación sobre Juventudes Rurales. *In* Conferencia Interamericana de Juventudes Rurales, 7a., Caracas, Oct. 17-22, 1976. 5 p.
74. DALFELT, A. Plan de manejo y desarrollo para el Parque Nacional Morrocoy, Venezuela. Presentado a PNUMA. Turrialba, Costa Rica, CATIE, 1976. 92 p.
75. _____. Some data related to costs and benefits of national parks in Latin America. *In* Reunión Internacional del IICA-Trópicos sobre Unidades de Conservación en la Región Amazónica. Santarem, Brasil, 1976. Informe. Santarem, Brasil, IICA-Trópicos. 66 p. (En prensa).
76. _____. Informe y recomendaciones sobre el uso futuro de las fincas Ciruelas y Palo Verde. Sometido a la Oficina de Planificación del Instituto de Tierras y Colonización de Costa Rica (ITCO). Turrialba, Costa Rica, CATIE, 1977. 14 p.
77. _____. Nature conservation status survey for Middle America. Informe preparado para IUCN, Suiza. Turrialba, Costa Rica, CATIE, 1977. 192 p.
78. DEATON, O. W. Algunos aspectos genéticos aplicados a la producción de leche en zonas tropicales. Turrialba, Costa Rica, CATIE, 1977.
Documento presentado en el Ciclo de Conferencias sobre Ganadería de Leche Tropical, 2o., Panamá, 1977. (En prensa).
79. DESIR, S. y PINCHINAT, A. M. Producción agronómica y económica de maíz y frijol común asociados, según tipo y población de plantas. Turrialba (Costa Rica) 26(3):237-240. 1976.
80. DIAZ, V. y MORON, I. Evaluación de dos cursos sobre técnicas de comunicación para médicos veterinarios y dos cursos sobre ayudas audiovisuales para técnicos de la Dirección Regional Central. Informativo de Evaluación Educativa No. 5. San Cristóbal, Rep. Dominicana, Departamento de Extensión y Capacitación Agropecuaria, 1976. 29 p.
81. _____ y MORON, I. Evaluación del curso instructores en cultivo de arroz. Informativo de Evaluación Educativa No. 4. San Cristóbal, Rep. Dominicana, Departamento de Extensión y Capacitación Agropecuaria, 1976. 23 p.
82. _____ y MORON, I. Evaluación del curso metodología de la capacitación. Informativo de Evaluación Educativa No. 3. San Cristóbal, Rep. Dominicana, Departamento de Extensión y Capacitación Agropecuaria, 1976. 18 p.
83. _____ y MORON, I. Evaluación de tres cursos sobre metodología de la extensión. Informativo de Evaluación Educativa No. 6. San Cristóbal, Rep. Dominicana, Departamento de Extensión y Capacitación Agropecuaria, 1977. 60 p.
84. _____, MORON, I., CABRERA, J. I. y BRACHE, M. Evaluación del curso intensivo producción de arroz. Informativo de Evaluación Educativa No. 7. San Cristóbal, Rep. Dominicana, Departamento de Extensión y Capacitación Agropecuaria, 1977. 41 p.
85. _____ y MORON, I. 2do. curso móvil superior de extensión. Informativo de Evaluación Educativa No. 9. San Cristóbal, Rep. Dominicana, Departamento de Extensión y Capacitación Agropecuaria, 1977. 31 p.
86. DIAZ BORDENAVE, J. A comunicação social nos países em desenvolvimento. Trabajo presentado al Seminario de Comunicación Social, 2o., Brasilia, 1976. 19 p.
87. _____. Las nuevas pedagogías y tecnologías de comunicación: sus implicaciones para la investigación. *In* Reunión de Consulta sobre Investigación en Comunicación para el Desarrollo Rural en Latinoamérica, Cali, Colombia, Nov. 22-27, 1976. Memoria. Bogotá, Centro Internacional de Investigaciones para el Desarrollo, 1976. 54 p.
88. _____. Communication and rural development. París, UNESCO, 1977. 107 p.
89. _____. Estratégias de ensino-aprendizagem. Petropolis, Brasil, Editora Vozes de Petropolis, 1977. 300 p.
90. _____. La transferencia de tecnología y la teoría general de los sistemas. Trabajo presentado al Seminario sobre Tecnología para el Pequeño Productor, Asunción, 1977. 36 p.
91. _____. O ensino da disciplina "Extensão Rural" nos currículos de Ciências agrárias. *In* Reunião Técnica de Professores de Extensao Rural, Belo Horizonte, Brasil, Abr. 11-14. 1977. Rfo de Janeiro, 1977. 16 p.
92. EL CATIE, un centro regional para apoyar las acciones de desarrollo agropecuario de América Central y del Caribe. Actividades en Turrialba (Costa Rica) 4(2):3-6. 1976.
Editado también en inglés.
93. ELDEN, T. C. y PAZ, P. E. Field cage studies to determine effects of Mexican bean beetle resistance in soybeans. *Journal of Economic Entomology* 70(1):26-29. 1977.
94. EL IICA en República Dominicana, 1976. Santo Domingo, Rep. Dominicana, Instituto Interamericano de Ciencias Agrícolas, 1977. 72 p.
95. EVALUACION DE PLANTACIONES FORESTALES DEL PERU. Informe. IICA. Informes de Conferencias, Cursos y Reuniones, no. 100. 1976. p. irr.
96. FIORENTINO, R. La generación, difusión y adopción de tecnología agropecuaria en el nordeste brasileiro, proyecto de investigación. Recife, Brasil, Universidad Federal de Pernambuco, 1976. s.p.
97. _____. La evaluación de las plantaciones permanentes y los costos de producción agrícola. Recife, Brasil, Universidad Federal de Pernambuco, Depto. de Economfa. 1976. (Texto para discusión no. 44).
98. _____. Una propuesta metodológica para el estudio de cambio tecnológico en el sector del nordeste brasileiro. Recife, Brasil, Universidad Federal de Pernambuco, Depto. de Ganadería. 1976. (Texto para discusión no. 45).

99. _____. Una visión general de los problemas de empleo y renta en el sector rural del nordeste brasileiro. Recife, Brasil, Universidad Federal de Pernambuco, Depto. de Economía. 1976. (Texto para discusión no. 43).
100. _____, PIÑEIRO, M. y TRIGO, E. El proceso de generación, difusión-adopción de tecnología agropecuaria en América Latina. Bogotá, Oficina del IICA en Colombia, 1977. s.p.
101. FIORENTINO, R. La imposición territorial y el desarrollo de la agricultura brasileira. Breves notas sobre un viejo tema. Recife, Brasil, Universidad Federal de Pernambuco, Depto. de Ganadería, 1977. (Texto para discusión no. 53).
102. _____. Las relaciones de poder institucional y la generación de tecnología en América Latina. Recife, Brasil, Universidad Federal de Pernambuco, Depto. de Economía, 1977. (Texto para discusión no. 52).
103. _____, PIÑEIRO, M. y TRIGO, E. Notas sobre la metodología para el estudio de la naturaleza y efectos de las innovaciones tecnológicas en el sector agropecuario. Bogotá, Oficina del IICA en Colombia, 1977. s.p.
104. FLETSCHNER, C. y RAS, N. Políticas de precios agropecuarios: objetivos e instrumentos. IICA. Publicación Miscelánea no. 144. 1977. 49 p.
105. FLORES, J. E. y ARAUJO, M. A. Analysis of the retail distributors study. *In* Appraisal of Fertilizer Markets and Distribution System in Central America with emphasis on Small Farmers. U.S. National Fertilizer Development Center, TVA, Muscle Shoals. Bulletin Y-89. pp. 69-114.
106. FLORES, R. y RUIZ, M. E. Alimentación de novillos con pulpa de café ensilada y diferentes niveles de proteína. ALPA Memoria 11:109. 1976. (Compendio).
107. FORSYTHE, W. M. Parcela demostrativa del control de erosión en un cultivo de maíz. *In* Reunión Anual del Programa Cooperativo Centroamericano para el Mejoramiento de Cultivos Alimenticios, 22a., San José, Costa Rica, 1976. Memoria. San José, Costa Rica, MAG, IICA, 1976. v.2, pp. M.12.1-M.12.4.
108. FRIAS, H. y CARVAJAL, R. Diagnóstico Institucional del Servicio de Extensión. San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA, 1976. 143 p.
109. FRIGERIO, N. El impacto potencial de los nuevos mercados mayoristas sobre los costos de distribución de alimentos en áreas urbanas. IICA. Publicación Miscelánea no. 136. 1976. 67 p.
110. FUNDAMENTOS PARA la estructuración de la organización de la SEIECA. San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA, 1977. 14 p.
111. GALRAO, M. J. Agricultural vocabulary in Spanish: sample of terms grouped under AGRIS Categories (FOO-F70) and Commodities (0100-3490). Turrialba, Costa Rica, CIDIA, 1977. 36 p.
- Documento presentado en el Consultation on AGRIS and the Development of Subject Vocabularies, Roma, Jun. 20-22, 1977.
112. GAMBOA, J. y BLASCO, M. Dinámica del fósforo en el suelo después de cinco fertilizaciones consecutivas. Turrialba (Costa Rica) 26(2):150-155. 1976.
113. GARCES, C. Vinculación de la educación con la comunidad rural. *In* Encuentro Nacional de Instituciones de Educación Agrícola Superior, Chapingo, México, Mayo 18-20, 1977. Informe. 96 p.
114. GARCIA M., J. y PINCHINAT, A. M. Producción asociada de maíz y soya a diferentes densidades de siembra. Turrialba (Costa Rica) 26(4):409-411. 1976.
115. GILARDI, J. Reparación de motores de tractores agrícolas. IICA. Libros y Materiales Educativos no. 20. 1977. 116 p. (3a. reimpresión).
116. GIL DE MURO, J. Una experiencia sobre el desarrollo rural. *In* Seminario sobre la Educación Agrícola para el Desarrollo Rural y Económico, Bogotá, Abr. 25-27, 1977. Conferencias y documentos. IICA. Informes de Conferencias, Cursos y Reuniones, no. 113. 1977. pp. IV.F.1-IV.F.3.
117. GIRAULT, C. y LA GRA, J. Réseaux de Commercialisation et approvisionnement urbain en Haiti. *In* Travaux et Documents de Géographie Tropicale, Centre d'Etudes de Géographie Tropicale. 28:1-46. 1977.
118. GOMEZ-MUÑOZ, M., PAULET, M., PERALTA-SERATA, M. y CASTILLO, L. A. Recopilación y análisis de la información sobre la organización, estructura y funciones de los Departamentos de Suelos, Semillas y Sanidad Vegetal. San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA, 1977. s.p.
119. GONZALEZ, L. C. Introducción a la fitopatología. IICA. Libros y Materiales Educativos, no. 29. 1976. 148 p. (1a. reimp. 1977).
120. GRONDIN, M. y MACKINNEY, W. Estudio Preliminar sobre las Federaciones o Juntas de Asociaciones Agropecuarias. Convenio IICA/SEA/FEDA. Documento técnico no. 32. 1976. 31 p.
121. _____. Esquemas Organizativos de los Productores Agrícolas para la Comercialización de sus Productos. Santo Domingo, Rep. Dominicana, Instituto Interamericano de Ciencias Agrícolas, 1977. 44 p.
122. _____, MACKINNEY, W. y LA GRA, J. Inventario Organizaciones Rurales, enero 1977. San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA, 1977. 10 p. (Anexos).
123. GUERRA, G. Manual de Administración de Empresas Agropecuarias. IICA. Libros y Materiales Educativos no. 30. 1976. 352 p. (1a. reimp., 1977).
124. GUILLET, D. Economic change and the acquisition of information in rural Peru. Documento de trabajo. Bogotá, Oficina del IICA en Colombia, 1976. 33 p.
125. _____. Migration, agrarian reform, and structural change in rural Peru. *Human Organization* 35(3):295-302. 1976.
126. _____ y UZZELL, D. New approaches to the study of migration. Houston, Rice University, 1976. s.p.

127. _____. The supra-household sphere of production in the Andean peasant economy. *In* International Congress of Americanists, 62nd, Paris, Sept. 2-4, 1976. Proceedings. (En prensa).
128. _____. Toward an analytical model of the andean peasant economy. Documento de trabajo. Bogotá, Oficina del IICA en Colombia, 1976. s.p.
129. _____ y SALAZAR, B. C. Bibliografía sobre aspectos sociales de la producción campesina en Colombia. 1977. (En prensa).
130. _____. El contexto social de los sistemas de producción campesina en Colombia. Bogotá, Oficina del IICA en Colombia, 1977. s.p.
- Documento presentado al Seminario sobre Alimentación de Rumiantes con Forrajes, Bogotá, Mayo 11-13, 1977.
131. _____. Organization of production among the peasantry of Peru, Ecuador and Colombia. Final report. Bogotá, Oficina del IICA en Colombia, 1977. s.p.
132. HART, R. El sistema de cultivos como unidad de experimentación. Turrialba, Costa Rica, CATIE, 1976. 11 p.
133. _____. Características de variedades que pueden tener potencial como componentes de los sistemas de cultivos de Yojoa, Honduras. *In* Reunión Internacional de Colaboración Técnica CATIE-CIAT-CIMMYT-IICA, Turrialba, Costa Rica, Jun. 2-3, 1977. Turrialba, Costa Rica, CATIE, 1977. 4 p.
134. _____. Las primeras 24 semanas de un estudio de caso en Yojoa, Honduras; informe preliminar. Turrialba, Costa Rica, CATIE, 1977. 40 p.
135. HERRERA, E. y RUIZ, M. E. Engorde de ganado con subproductos de caña de azúcar. 3. Sustitución de azúcares por almidón. *Producción Animal Tropical (México)* 1(1):57. 1976.
- También en: ALPA Memoria 11:101. 1976. (Compendio).
136. HOLLE, M. El clima de las zonas (lugares) donde se realizan los trabajos del programa de sistemas de producción para el pequeño agricultor. Turrialba, Costa Rica, CATIE, 1976. 8 p.
137. HOLLE, M. y SAUNDERS, J. Descripción de los sistemas de cultivo y algunas características de los agricultores de San Isidro de El General, Costa Rica. *In* Reunión Internacional de Colaboración Técnica CATIE-CIAT-CIMMYT-IICA, Turrialba, Costa Rica, Jun. 2-3, 1977. Turrialba, Costa Rica, CATIE, 1977. 18 p.
138. _____. Las hortalizas en sistemas de producción para condiciones del pequeño agricultor; informe final de consultoría. Turrialba, Costa Rica, CATIE, 1977. 50 p.
139. HOYOS, D., GIRALDO, U. y NARANJO, G. Curso Histología; unidad académica no. 4: Glándulas anexas al tubo digestivo. Bogotá, Oficina del IICA en Colombia, 1977. 11 p.
140. _____, GIRALDO, U. y NARANJO, G. Curso Histología; unidad académica no. 10: Tubo digestivo. Bogotá, Oficina del IICA en Colombia, 1977. 12 p.
141. _____, GIRALDO, U. y NARANJO, G. Curso Histología; unidad académica no. 11: Aparato respiratorio. Bogotá, Oficina del IICA en Colombia, 1977. 10 p.
142. _____, GIRALDO, U. y NARANJO, G. Curso Histología; unidad académica no. 12: Aparato urinario. Bogotá, Oficina del IICA en Colombia, 1977. 9 p.
143. _____, GIRALDO, U. y NARANJO, G. Curso Histología; unidad académica no. 13: Aparato reproductor. Bogotá, Oficina del IICA en Colombia, 1977. 11 p.
144. _____, GIRALDO, U. y NARANJO, G. Curso Histología; unidad académica no. 14: Piel y anexos. Bogotá, Oficina del IICA en Colombia, 1977. 8 p.
145. INFANTE, O., M. Asignación de recursos para la investigación agrícola. San Salvador, Oficina del IICA en El Salvador, 1977. 16 p.
- Presentado en la Reunión Anual de la Sociedad de Ingenieros Agrónomos de El Salvador, San Salvador, Jun. 2, 1977.
146. INSTITUTO INTERAMERICANO DE CIENCIAS AGRICOLAS. Calendario de oferta de hortalizas frescas en Buenos Aires. IICA. Publicación Miscelánea no. 143. 71 p.
147. _____. Cambios contemporáneos en la estructura agraria peruana. IICA. Informes de Conferencias, Cursos y Reuniones, no. 109. 1976. 130 p.
148. _____. Colonización y formas asociativas en el Paraguay. IICA. Informes de Conferencias, Cursos y Reuniones, no. 110. 1976. 131 p.
149. _____. Estudio de la organización y manejo de las empresas ganaderas en el partido de Dolores, IICA. Publicación Miscelánea, no. 146. 1976. 163 p.
150. _____. Informe anual 1976. San José, Costa Rica, 1976. 220 p. Editado también en inglés.
151. _____. Informe de la Comisión Mixta - Secretaría de Recursos Naturales y el Instituto Interamericano de Ciencias Agrícolas- para el establecimiento de un proyecto para el desarrollo rural de la zona sur-occidental de Honduras. Tegucigalpa, Oficina del IICA en Honduras, 1976. 33 p.
152. _____. Informe trimestral de la Labor de Asesoría del IICA a los Proyectos 011-012-013 y 015 del PIDAGRO. Santo Domingo, Rep. Dominicana, IICA/SEA/FEDA, 1976-1977.
- Abril - Junio 1976: 76 p.
Jul - Sept. 1976: 91 p.
Oct. - Dic. 1976: 100 p.
Ene. - Mar. 1977: 156 p.
153. _____. Informe trimestral y anual sobre la marcha y ejecución del Proyecto de Cooperación Técnica en Comercialización IICA/SEA, Tercer Informe. (hasta julio 1976). Santo Domingo, Rep. Dominicana, 1976. 60 p.

154. _____. Instructivo para el control de calidad de plaguicidas y sus residuos. México, D.F., 1977. 99 p.
155. _____. Medalla Agrícola Interamericana 1976. San José, Costa Rica, 1976. 31 p.
156. _____. Reforma agraria, colonización y formas asociativas en Bolivia. IICA. Informes de Conferencias, Cursos y Reuniones, no. 108. 1976. 86 p.
157. _____. Reglamento y normas del Fondo Simón Bolívar. IICA. Documentos Oficiales, no. 12. 1977. 61 p.
Editado también en inglés.
158. _____. Reunión Anual de la Junta Directiva, 15a., Washington, D.C., Mayo 6-12, 1976. Informe. IICA. Documentos Oficiales no. 11. 1976. 202 p.
Editado también en inglés.
159. _____. Una proyección del desarrollo rural humanista. Informe 1976. San José, Costa Rica, 1976. 67 p.
Editado también en inglés.
160. IICA. BUREAU EN HAITI. Analyse institutionnelle sommaire du secteur agricole. Port-au-Prince, 1977. s.p.
161. _____. Projet d'éducation rurale intégrée. Port-au-Prince, 1977. 3 v.
162. IICA. CENTRO INTERAMERICANO DE DOCUMENTACION E INFORMACION AGRICOLA. Lista de publicaciones periódicas y seriadas. IICA. Documentación e Información Agrícola, no. 52. 1976. 104 p.
163. IICA. OFICINA EN CHILE. Anuncios de Cursos regulares y Cursos cortos del Programa Permanente para Graduados. Santiago, 1976.
164. _____. Directorio e información general sobre el Programa Permanente para Graduados. Santiago, 1976.
165. _____. Diagnóstico del sector agrícola, análisis institucional y plan de acción. Documentos de programación. Santiago, 1977. 66 p.
166. _____. Servicio a los países: Chile 1976. Santiago, 1977. 28 p.
167. IICA. OFICINA EN EL ECUADOR. Anteproyecto para la creación y establecimiento del subsistema de información agropecuaria de Ecuador (documento para información, estudio y discusión). Quito, Ecuador, 1976. 20 p.
168. ISIDOR, M. E. y RUIZ, M. E. Niveles de proteína y fibra en engorde de ganado con banano. ALPA Memoria 11:86. 1976. (Compendio).
169. ITURBIDE, A. Alimentación del ganado bovino con énfasis en la época seca. Convenio IICA/SEA/FEDA. Material Didáctico no. 31. 1976. 38 p.
170. _____. Consideración sobre algunas gramíneas forrajeras comunes en República Dominicana. Convenio IICA/SEA/FEDA. Material Didáctico no. 28. 1976. 20 p.
171. _____. Consideraciones sobre el programa de la Estación Ganadera de Río Limpio; acciones de aplicación inmediata. San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA y Dirección General de Ganadería, 1976. 9 p.
172. _____. *et al.* Memoria del primer seminario de producción animal para veterinarios del Servicio de Extensión. San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA, 1976. 161 p.
Co-autores: C. León-Velarde, L. Machuca y A. Fermín.
173. _____. *et al.* Reestructuración de la División Pecuaria. San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA, 1976. 19 p.
Co-autores: H. Nasta, C. León-Velarde, L. Machuca y A. Fermín.
174. _____. Apuntes sobre pasturas tropicales. Convenio IICA/SEA/FEDA. Material Didáctico no. 37. 1977. 122 p.
175. _____. Lineamientos del proyecto nacional de extensión en pastos y forrajes. Convenio IICA/SEA/FEDA. Documento técnico bo. 36. 1977. 38 p.
176. JIMENEZ-SAA, H. Directrices para la selección de documentos en los Sistemas AGRINTER y AGRIS. IICA. Documentación e Información Agrícola no. 51. 1976. 16 p.
177. JOHNSTON, T. D. El achote como una alternativa promisoría para incluir en sistemas del pequeño agricultor. Turrialba, Costa Rica, CATIE, 1976. 63 p.
Editado también en inglés.
178. LARIOS C., J. F. y MORENO M., R. A. Epidemiología de algunas enfermedades foliares de la yuca en diferentes sistemas de cultivo. I. Mildiu polvoroso y roña. Turrialba (Costa Rica) 26(4):389-398. 1976.
179. _____. y MORENO M., R. A. Epidemiología de algunas enfermedades foliares de la yuca en diferentes sistemas de cultivo. II. Roya y muerte descendente. Turrialba (Costa Rica) 27(2):151-156. 1977.
180. LAZOS F. Los procesos de difusión y adopción. Guatemala, IICA, Dirección Regional para la Zona Norte, s.f.
181. _____. Situación y experiencia de la transferencia de tecnología en América Central. Guatemala, IICA, Dirección Regional para la Zona Norte, s.f.
182. LEON-VELARDE, C. *et al.* Digestibilidad *in vivo* de las fracciones de la pared celular en seis gramíneas tropicales. ALPA Memoria 11:92-93. 1976. (Compendio).
183. _____. La preparación de diapositivas como ayuda visual en la labor de extensión. Convenio IICA/SEA/FEDA. Material Didáctico no. 29. 1976. 8 p.
184. _____. Manejo de ganado lechero. Convenio IICA/SEA/FEDA. Material Didáctico no. 34. 1976. 42 p.
185. _____. y SOTO, Y. Recopilación de investigación pecuaria, temas desarrollados de 1970 a 1975. San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA, 1976. 40 p.

186. _____ e ITURBIDE, A. Análisis de las funciones y situaciones de operacionalidad de la Subdirección de Extensión, Departamento de Extensión y Capacitación Agropecuaria de la SEA. Convenio IICA/SEA/FEDA. Documento técnico no. 34. 1977. 30 p.
187. _____ *et al.* Digestibilidad *in vitro* de las fracciones de la pared celular en seis gramíneas tropicales. ALPA Memoria 11:92-93. 1977.
Co-autores: C. Colmenares, K. Vohnout y L. Turriza.
188. _____ e ITURBIDE, A. Enfoque técnico de los cursos regulares para extensionistas de la SEA en producción del ganado bovino. Convenio IICA/SEA/FEDA. Documento técnico no. 35. 1977. 27 p.
189. _____ y ROMERO, F. Evaluación del cruce por absorción del Brahman en la costa atlántica de Costa Rica. I. Caracteres de reproducción. ALPA Memoria 11:59. 1977.
190. _____ y ROMERO, F. Evaluación del cruce por absorción del Brahman en la zona atlántica de Costa Rica. II. Caracteres de crecimiento. ALPA Memoria 11:29. 1977.
191. _____ *et al.* Recolección de información sobre extensión para la formulación del PLANIE. San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA, 1977. 59 p.
192. LESPINASSE, R. C. Bibliothèque de la Faculté d'Agronomie et de Médecine Vétérinaire. Port-au-Prince, Bureau de l'IICA en Haiti.
193. LIBOREIRO, E. Análisis de formas asociativas de producción: guía para diligenciar el formulario. Bogotá, IICA, INCORA, 1977. 17 p.
194. _____. Aspectos económicos y sociales de la colonización. *In* Reunión Ordinaria de Ejecutivos de Reforma Agraria del Istmo Centroamericano, 11a., Managua, Abr. 18-23, 1977. Memoria. Managua, Instituto Agrario de Nicaragua, Instituto Interamericano de Ciencias Agrícolas, 1977. pp. 8.1-8.19.
195. _____. Criterios para determinar modalidades más apropiadas de organización. *In* Seminario sobre Fomento de Formas Asociativas de Producción en el Medio Rural, Heredia, Costa Rica, 1976. San José, Costa Rica, DSE/IICA, 1977. pp. 27-28.
196. _____ y SANDOVAL, L. Estrategias para la promoción de las formas asociativas de producción. *In* Seminario sobre Fomento de Formas Asociativas de Producción el Medio Rural, Heredia, Costa Rica, 1976. San José, Costa Rica, DSE/IICA, 1977. pp. 33-36.
197. _____. Las empresas comunitarias: instrumento para la organización y participación del campesinado. *In* Seminario sobre Fomento de Formas Asociativas de Producción en el Medio Rural, Heredia, Costa Rica, 1976. San José, Costa Rica, DSE/IICA, 1977. pp. 29-32.
198. _____. Marco teórico para el análisis de estrategias para el desarrollo rural. Bogotá, Oficina del IICA en Colombia, 1977. 60 p.
199. _____. Normas e indicadores para la evaluación de resultados de programas de desarrollo rural. Bogotá, Oficina del IICA en Colombia, 1977. 10 p.
200. LOPEZ, J., G. y NARANJO M., G. Curso de Fisiología Vegetal; unidad académica no. 4: La transformación de la energía. *In* Reunión Técnica sobre Desarrollo de Modelos de Planificación Universitaria en Ciencias Agrícolas, Bogotá, Oct. 25-28, 1976. Documentos. IICA. Informes de Conferencias, Cursos y Reuniones, no. 77. 1976. pp. 1-49.
201. _____ y NARANJO M., G. Fisiología vegetal; planeación curricular para un curso de nivel universitario. *In* Reunión Técnica sobre Desarrollo de Modelos de Planificación Universitaria en Ciencias Agrícolas, Bogotá, Oct. 25-28, 1976. Documentos. IICA. Informes de Conferencias, Cursos y Reuniones, no. 77. 1976. pp. 1-9.
202. _____ y NARANJO M., G. Programa del Curso de Fisiología Vegetal. *In* Reunión Técnica sobre Desarrollo de Modelos de Planificación Universitaria en Ciencias Agrícolas, Bogotá, Oct. 25-28, 1976. Documentos. IICA. Informes de Conferencias, Cursos y Reuniones, no. 77. 1976. pp. 1-21.
203. LUQUE, E. y NARANJO, G. Curso Bioquímica; unidad académica no. 10: Lípidos. Bogotá, Oficina del IICA en Colombia, 1977. 9 p.
204. _____ y NARANJO, G. Curso Bioquímica; unidad académica no. 11: Metabolismo de los ácidos grasos. Bogotá, Oficina del IICA en Colombia, 1977. 9 p.
205. MANSFIELD, G. *et al.* Estudio sobre pérdidas post-cosecha de tomate en República Dominicana. Proyecto Integrado de Comercialización SEA/IICA. Documento no. 27. 1977. 62 p.
Co-autores: F. Jiménez, J. Pérez y G. Mendoza.
206. MARTE, R., CASSALETT, C. y PEREZ-DUVERGE, R. Recopilación y análisis de información sobre organización, estructura y funcionamiento del Departamento de Investigaciones. San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA, 1977. 15 p.
207. MARTINEZ, D. *et al.* Diagnóstico del abastecimiento de alimentos en Santo Domingo. Proyecto Integrado de Comercialización SEA/IICA. Documento no. 30. 1977. 61 p.
208. _____. Reorganización Mercado Villa Consuelo. Resumen Proyecto Grado. Santo Domingo, Rep. Dominicana Instituto Interamericano de Ciencias Agrícolas, 1977. 70 p. (Anexos).
209. MARZOCCA, A. L'action de l'IICA. Montevideo, IICA, Dirección Regional para la Zona Sur, 1977. 4 p.
Presentado en el Seminaire sur la Mecanisation des exploitations Individuelles des Pays Chaudes, Paris, 1977.
210. _____. *et al.* Manual de malezas. 3a. ed. Buenos Aires, Editorial Hemisferio Sur, 1976. 564 p.
Co-autores: O. J. Marsico y O. del Puerto.
211. _____. Tecnología vs. técnica e importancia de su transferencia en el desarrollo agrícola. *In* Seminario sobre Transferencia de Tecnología Agrícola, Montevideo, 1976. IICA. Informes de Conferencias, Cursos y Reuniones, no. 112. 1976. 9 p.

212. MATEO, N. y MORENO, R. Estudio de siete sistemas de producción agrícola en Platanares de Pérez Zeledón, Costa Rica. Turrialba, Costa Rica, CATIE, 1976. 23 p.
213. MENDOZA, L. A. Abastecimiento. Lima, IICA, Dirección Regional para la Zona Andina, 1976. 68 p.
214. _____. La administración o gestión de personal. Lima, IICA, Dirección Regional para la Zona Andina, 1976. 35 p.
215. _____. La técnica del presupuesto por programas. Lima, IICA, Dirección Regional para la Zona Andina, 1976. 39 p.
216. MIRANDA, H. Algunos aspectos de la situación de frijol en Centroamérica. *In* Reunión Internacional de Colaboración Técnica CATIE-CIAT-CIMMYT-IICA, Turrialba, Costa Rica, Jun. 2-3, 1977. Turrialba, Costa Rica, CATIE, 1977. 2 p.
217. _____. Algunos aspectos relacionados a introducción de nuevas variedades o especies de leguminosas de grano en Centroamérica. San Salvador, Oficina del IICA en El Salvador, 1976. s.p.
- Documento presentado en el Congreso Latinoamericano de Nutrición, 4o., Caracas, Nov. 21-27, 1976.
218. _____. comp. Notas sobre los Cursos de Comunicación y Metodología de Extensión Agrícola. Santa Tecla, El Salvador, CENTA, IICA, AID, 1976. 266 p.
219. _____. Ed. Notas sobre los Cursos de Producción de Maíz y Frijol. Santa Tecla, El Salvador, CENTA, IICA y AID, 1976. 352 p.
220. _____. Algunos problemas y soluciones en la Introducción de Soya en Centroamérica. San Salvador, Oficina del IICA en El Salvador, 1977. 9 p.
- Documento presentado en el Seminario Universidad de Iowa-IICA, San José, Costa Rica, Feb. 7-11, 1977.
221. MOH, C. C. Mutability of the mottling gene in pinto bean. Turrialba, (Costa Rica) 26(3):308. 1976.
222. MOJICA, I. H. Reconocimiento sobre el manejo de las áreas de captación de los embalses de Tavera y Valdesia. Santo Domingo, Rep. Dominicana, Instituto Interamericano de Ciencias Agrícolas, 1977. 13 p.
223. MOLINA, O. y VOHNOUT, K. Uso de melaza en ganado en pastoreo. 3. Vacas lecheras. ALPA Memoria 11:9. 1976. (Compendio).
224. MORALES ABANTO, A. y MULLER, L. E. Alteraciones producidas en el maracuyá (*Passiflora edulis* Sims) por deficiencias de manganeso, hierro, boro y zinc. Turrialba, (Costa Rica) 27(2):163-168. 1977.
225. _____ y MULLER, L. E. Alteraciones producidas en el maracuyá (*Passiflora edulis* Sims) por deficiencias de nitrógeno, fósforo y potasio. Turrialba (Costa Rica) 26(4):331-336. 1976.
226. MORALES, R. y WHITMORE, J. L. Notas silviculturales sobre el Pochote (*Bombacopsis quinata*). Turrialba, Costa Rica, CATIE, 1977. 25 p.
227. _____. Notas sobre los recursos naturales y culturales, de la región de Darién, Panamá. Turrialba, Costa Rica, CATIE, 1977. 18 p.
228. _____. Notas sobre los recursos naturales y culturales de la Mosquitia Hondureña. Turrialba, Costa Rica, CATIE, 1977. 20 p.
229. MORAN, M. J. Supermercados en Bolivia. San José, Costa Rica, IICA, Dirección General, 1976. s.p.
- Apuntes para el Curso de Comercialización Internacional y Promoción de Exportaciones, Instituto Mexicano de Comercio Exterior, México, D.F., 1976.
230. _____. Towards a new strategy in agricultural marketing for rural development - small farm participation and policy implications. San José, Costa Rica, IICA. Dirección General, 1976. s.p.
- Preparado para OECD/FAO International Seminar on Critical Issues on Food Marketing Systems in Developing Countries, París, Oct. 18-22, 1976.
231. _____. Transfer of post harvest technologies to small farmers.
- Preparado para la International Seminar on Post Harvest Food Losses in the Caribbean and Central America, Santo Domingo, Dominican Republic, Aug. 8-11, 1977.
232. MORENO, R.A. *et al.* Un Programa de investigación en sistemas de agricultura para pequeños agricultores; fundamentos y metodología. Turrialba, Costa Rica, CATIE, 1976. 26 p.
233. _____. Efecto de diferentes sistemas de cultivo sobre la severidad de la mancha angular del frijol (*Phaseolus vulgaris* L.) causada por *Isariopsis griseola* Sacc. *Agronomía Costarricense* 1(1):39-42. 1977.
234. _____. Fundamentos del programa de sistemas de producción de cultivos para pequeños agricultores del CATIE. *In* Reunión Internacional de Colaboración Técnica CATIE-CIAT-CIMMYT-IICA, Turrialba, Costa Rica, Jun. 2-3, 1977. Turrialba, Costa Rica, CATIE, 1977. 11 p.
235. MORON, I. y DIAZ, V. Evaluación del curso metodología de la extensión para supervisores. Informativo de Evaluación Educativa No. 2. San Cristóbal, Rep. Dominicana, Departamento de Extensión y Capacitación Agropecuaria, 1976. s.p.
236. _____ y DIAZ, V. Evaluación del desarrollo de dos cursos para instructores. Informativo de Evaluación Educativa No. 1. San Cristóbal, Rep. Dominicana, Departamento de Extensión y Capacitación Agropecuaria, 1976. 23 p.
237. _____ y DIAZ, V. Evaluación de cursos a productores - año 1976. Informativo de Evaluación Educativa No. 10. San Cristóbal, Rep. Dominicana, Departamento de Extensión y Capacitación Agropecuaria, 1977. 26 p.
238. _____ y DIAZ, V. Evaluación de seguimiento de cursos para instructores 1976. Informativo de Evaluación Educativa No. 8. San Cristóbal, Rep. Dominicana, Departamento de Extensión y Capacitación Agropecuaria, 1977. 12 p.

239. _____, CAMEJO, S. y GONZALEZ, G. Recopilación y análisis de información sobre organización, estructura y funciones de la Subdirección de Capacitación. San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA, 1977. 65 p.
240. MUJICA, A. y NARREA, A. Mecanización en la siembra de la quinua. IICA. Fondo Simón Bolívar-PUNO-PERU. Proyecto Quinua. Boletín técnico no. 6. 1977.
241. _____. Tecnología del cultivo de quinua. IICA-Fondo Simón Bolívar-PUNO-PERU. Proyecto Quinua. Boletín técnico no. 2. 1977.
242. _____. Utilización de la motopulverizadora en el cultivo de la quinua. IICA-Fondo Simón Bolívar-PUNO-PERU. Proyecto Quinua. Boletín técnico no. 5. 1977.
243. MUÑOZ, H. y DEATON, O. W. El uso del ganado criollo en cruzamientos para la producción de leche en el Trópico Americano. *In* Seminario Internacional de Ganadería Tropical, México D.F., 1976. Memorias. México, D.F., Secretaría de Agricultura y Ganadería, Banco de México, 1976. pp. 171-182.
244. _____. El ganado criollo centroamericano. *In* Seminario sobre Razas de Bovinos Criollos, Bogotá, 1977. Memorias. Asociación Colombiana de Producción Animal, 1977.
245. MURCIA, H. H. Consideraciones para la elaboración de un proyecto de creación de un Centro de Apoyo en Programación Agropecuaria en la Escuela de Economía Agrícola de la Facultad de Agronomía de la Universidad de Costa Rica. San José, U.C.R., Facultad de Agronomía, 1976. s.p.
246. _____. Reseña del libro "Crédito Rural" de Jaime Vélez. Desarrollo Rural en las Américas (Costa Rica) 8(3); 1976.
247. MURRAY, G. F. Los campesinos dominicanos y el comerciante rural. Esbozo de una metodología de investigación. Santo Domingo, Rep. Dominicana, Instituto Interamericano de Ciencias Agrícolas, 1977. 49 p.
248. NARANJO M., G. Esquema curricular para asignaturas comprendidas en un curso de capacitación campesina. Bogotá, Oficina del IICA en Colombia, 1976. 3 p.
249. _____. La preparación de programas educativos para la capacitación campesina. Bogotá, Oficina del IICA en Colombia, 1976. 25 p.
250. _____. Taller-aula para la capacitación de capacitadores campesinos del Instituto Colombiano de la Reforma Agraria (INCORA). Bogotá, Oficina del IICA en Colombia, 1976. 37 p.
251. _____. Un modelo de planificación curricular en educación universitaria. *In* Reunión Técnica sobre Desarrollo de Modelos de Planificación Universitaria en Ciencias Agrícolas, Bogotá, Oct. 25-28, 1976. Documentos, IICA. Informes de Conferencias, Cursos y Reuniones, no. 77. 1976. pp. II.D.1-II.D.20.
252. _____. Segundo taller-aula para la capacitación de capacitadores campesinos del Instituto Colombiano de la Reforma Agraria (INCORA). Bogotá, Oficina del IICA en Colombia, 1977. s.p.
253. _____. La educación agrícola superior; un estudio de casos en Colombia. *In* Seminario sobre la Educación Agrícola para el Desarrollo Social y Económico, Bogotá, Abr. 25-27, 1977. Conferencias y documentos. IICA. Informes de Conferencias, Cursos y Reuniones, no. 113. 1977. pp. IV.C.1-IV.C.31.
254. NASTA, H. Aguadas-características y aprovechamiento. Convenio IICA/SEA/FEDA. Material Didáctico no. 32. 1976. 23 p.
255. _____. Características del bovino productor de carne: Razas - Selección - Cruzamientos. Convenio IICA/SEA/FEDA. Material Didáctico no. 27. 1976. 18 p.
256. _____. Determinación de la edad de los bovinos por medio de la observación de los dientes. Convenio IICA/SEA/FEDA. Material Didáctico no. 25. 1976. 7 p.
257. _____. Manejo de ganado de carne. Convenio IICA/SEA/FEDA. Material Didáctico no. 33. 1976. 30 p.
258. _____. Métodos de conservación de forraje, henificación. Convenio IICA/SEA/FEDA. Material Didáctico no. 26. 1976. 16 p.
259. _____. Sistemas de pastoreo. Apotreramiento. Convenio IICA/SEA/FEDA. Material Didáctico no. 36. 1977. s.p.
260. NAVARRO, L. A. y MORENO, R. El enfoque multidisciplinario en la investigación agrícola con pequeños agricultores. Turrialba, Costa Rica, CATIE, 1976. 8 p.
261. _____. Actitud general de los agricultores involucrados en el proyecto de sistemas de cultivos del CATIE, hacia sus variedades de cultivo. *In* Reunión Internacional de Colaboración Técnica CATIE-CIAMYT-IICA, Turrialba, Costa Rica, Jun. 2-3, 1977. Turrialba, Costa Rica, CATIE, 1977. 23 p.
262. _____. Víctor Manuel Víquez, estudio de caso en Costa Rica; informe preliminar. Turrialba, Costa Rica, CATIE, 1977. 77, 24 p.
263. NEGRON, A., DEATON, O. W. y MUÑOZ, H. Características de reproducción en un hato lechero en la zona húmeda de Costa Rica. ALPA Memoria 11:65. 1976. (Compendio).
264. _____. DEATON, O. W. y MUÑOZ, H. Largo de gestación en diferentes grupos raciales de vacunos de leche. ALPA Memoria 11:67. 1976. (Compendio).
265. _____. DEATON, O. W. y MUÑOZ, H. Peso al nacimiento de diferentes grupos raciales de vacunos de leche. ALPA Memoria 11:28. 1976. (Compendio).
266. _____. DEATON, O. W. y MUÑOZ, H. Producción de leche en la zona húmeda de Costa Rica. ALPA Memoria 11:52. 1976. (Compendio).
267. NOSSA, A. *et al.* La quinua en la alimentación de codornices. Bogotá, Oficina del IICA en Colombia, 1977. 14 p.

Co-autores: A. Cardozo, D. Garzón y J. Castillo.

268. OCHOA, C. y RUIZ, M. E. Engorde de ganado con sub-productos de caña de azúcar. 1. Niveles de proteína y fibra. *Producción Animal Tropical* (México) 1(1):56. 1976. (Compendio).
269. OLIART, F. Reforma agraria y desarrollo rural integrado. *Desarrollo Rural en las Américas* (Costa Rica) 8(2):153-165. 1976.
270. OZUNA, D.T., PAZ, P. E. y TAVERAS, Q. Identificación de áreas específicas para la prestación de servicios administrativos y venta de productos de la SEIECA. San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA, 1977. 11 p.
271. PACORI, A. Producción de quinua en llave. IICA-Fondo Simón Bolívar-PUNO-PERU. Proyecto Quinua. Boletín técnico no. 7. 1977.
272. PALENCIA ORTIZ, A. Algunos aspectos relacionados con la encuesta de pequeños agricultores practicada en las regiones de la Trinidad (Estelí) y San Ramón (Matagalpa), Nicaragua, para el proyecto CATIE/ROCAP. Turrialba, Costa Rica. CATIE, 1976. 10 p.
273. ———. Informe de actividades del proyecto de investigación en sistemas de producción de pequeños agricultores en Nicaragua (Proyecto MAG-Nicaragua-CATIE/ROCAP). Turrialba, Costa Rica, CATIE, 1977. 38 p.
274. PAULET, M. Análisis de intensidad de la lluvia en República Dominicana, Zona Noroeste. Convenio IICA/SEA/FEDA. Documento de trabajo no. 30. 1976. 23 p.
275. ———. trad. Aspectos hidrológicos para el diseño de reservorios (Linsley). San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA, 1976. 14 p.
276. ———. Intensidades máximas y erosividad de las lluvias en República Dominicana. Zona: Línea Noroeste. Convenio IICA/SEA/FEDA. Documento Técnico no. 30. 1976. 24 p.
277. ———. La división de conservación de suelos y aguas. Organización propuesta. Convenio IICA/SEA/FEDA. Documento Técnico no. 29. 1976. 24 p.
278. ———. Planeamiento del uso de las tierras agrícolas en zonas de lluvia. Material didáctico sobre la Ecuación Universal de Predicción de Pérdidas de Suelos. Convenio IICA/SEA/FEDA. Material Didáctico no. 21. 1976. 18 p.
279. ———. Normas para el dibujo de planos. Coordenadas y dimensiones. Convenio IICA/SEA/FEDA. Documento Técnico no. 39. 1977. 9 p.
280. ———. Procedimiento de cálculo para nivelación de tierras usando la computadora. Método del Centroide. Convenio IICA/SEA/FEDA. Documento Técnico no. 37. 1977. 22 p.
281. PAZ, P. E., SANCHEZ, M. O. DE. y HANSEN, R. Comparación de marcos de siembra en combinación con herbicidas en cultivo de maní. *Investigación* (Rep. Dominicana) 4(2):10-13. 1977.
282. ——— y ROSARIO, M. Comparación de tres variedades de "soya vegetal". *Investigación* (Rep. Dominicana) 4(1):7-8. 1977.
283. PEÑA, I. y REYES, M. Problemas de comercialización y de mercadeo que enfrentan los pequeños agricultores: estrategias y soluciones planteadas en Colombia. Bogotá, Ministerio de Agricultura, OPSA, 1977. 22 p.
- Documento presentado en el Seminario Latinoamericano y del Caribe sobre Estrategias de Comercialización para Pequeños Agricultores, San José, Costa Rica, Abr. 25-28, 1977.
284. PEZO, D. *et al.* Predicción del consumo de pastos en base a fracciones químicas y parámetros de digestión. Turrialba (Costa Rica) 27(2):157-162. 1977.
- Co-autores: K. Vohnout, C. León-Velarde y A. Cargano.
285. ——— y VOHNOUT, K. Tasas de digestión *in vitro* de seis gramíneas tropicales. Turrialba (Costa Rica) 27(1):47-53. 1977.
286. ——— VOHNOUT, K. y LEON-VELARDE, C. Predicción del consumo de pasto por técnicas *in vitro*. ALPA Memoria 11:104. 1976. (Compendio).
287. ——— y VOHNOUT, K. Uso de melaza con ganado de pastoreo. 2. Novillas lecheras. ALPA Memoria 11:89. 1976. (Compendio).
288. PINCHINAT, A. M. Improving the production of legumes and oilseeds. *In* Scrimshaw, N.S. y Behar, M., eds. Nutrition and agricultural development: significance and potential for the Tropics. New York, Plenum Press, 1976. pp. 325-328.
289. ——— SORIA, J. y BAZAN, R. Multiple cropping in Tropical America. *In* Symposium on Multiple Cropping, Knoxville, Tenn., 1975. Proceedings. Madison, Wis., American Society of Agronomy, 1976. pp. 51-61.
290. ———. Rendimiento del maíz según manejo de la parte aérea de la planta. Turrialba (Costa Rica) 26(3):286-287. 1976.
291. ———, BAZAN, R. y SORIA, J. Sugerencias para la institucionalización del PCCMCA. *In* Reunión Anual del Programa Cooperativo Centroamericano para el Mejoramiento de Cultivos Alimenticios, 22a., San José, Costa Rica 1976. Memoria. San José, Costa Rica, MAG/IICA, 1976. 5 p.
292. PINTO, J. B. Educación y capacitación campesina: un esfuerzo de teorización. Santo Domingo, Rep. Dominicana, IICA, 1977. 13 p.
293. PIÑEIRO, M., TRIGO, E. y FIORENTINO, R. El proceso de generación, difusión y adopción de tecnología agropecuaria en América Latina. Bogotá, Oficina del IICA en Colombia, 1977. 48 p.
294. ——— y TRIGO, E. La planificación de la investigación a partir de programas por producto: algunos comentarios críticos. IICA. Publicación Miscelánea, no. 150. 1977.
295. ——— y TRIGO, E. La transferencia de ciencia y tecnología y la educación agrícola. *In* Seminario sobre la educación agrícola para el desarrollo rural y económico, Bogotá, Abr. 25-27, 1977. Conferencias y documentos. IICA. Informes de Conferencias, Cursos y Reuniones, no. 113. 1977. pp. IV.J.1-IV.J.35.

296. ———, y TRIGO, E. La transferencia de tecnología y la educación superior. Bogotá, Oficina del IICA en Colombia, 1977. s.p.
297. ———y TRIGO, E. Planificación de la investigación agrícola a partir de programas por producto: algunos comentarios críticos. Bogotá, Oficina del IICA en Colombia, 1977. 21 p.
298. ———y TRIGO, E. Un marco general para el análisis del progreso tecnológico agropecuario. IICA. Publicación Miscelánea, no. 149. 1977.
299. ———y TRIGO, E. Un marco general para el análisis del progreso tecnológico agropecuario: las situaciones de cambio tecnológico. Bogotá, Oficina del IICA en Colombia, 1977. 47 p.
300. PROGRAMA DE investigación pecuaria a nivel nacional. San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA, 1976. 46 p.
301. PROPUESTA DE organización para la Subsecretaría de Estado de Investigación, Extensión y Capacitación Agropecuaria (SEIECA). San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA, 1977. 46 p.
302. PROYECTO INTEGRADO DE COMERCIALIZACION SEA/IICA. Encuesta de entrada y salida de productos agropecuarios a Santo Domingo (tercera parte). SEA/IICA. Proyecto Integrado de Comercialización. Documento no. 26. 1977. 93 p.
303. ———. Proyecto Centros de Servicios Rurales Integrados-CENSERI. SEA/IICA. Proyecto Integrado de Comercialización. Documento no. 28. 1977. 17 p.
304. QUIROGA, V. Manual práctico para análisis de experimentos de campo. IICA. Publicación Miscelánea, no. 142. 1976. 113 p.
305. ———, RULFO, F. y CARBALLO, A. Manual de investigación y experimentación agropecuaria. Managua, Oficina del IICA en Nicaragua, 1976. 113 p.
306. ———. Manual de estadística descriptiva. IICA. Publicación Miscelánea, no. 147. 1977. 82 p.
307. ———. Manual para estimar parámetros de seis modelos aplicados a fenómenos sociales, económicos y biológicos. IICA. Publicación Miscelánea, no. 145. 1977. 36 p.
308. ———, PAEZ, G. y ZAMORA, M. Manual de codificación, almacenamiento y recuperación de información bibliográfica. IICA. Publicación Miscelánea, no. 148. 1977. 38 p.
309. REA, J. *et al.* Establecimiento de semilleros oficializados de quinua. IICA-Fondo Simón Bolívar-PUNO-PERÚ. Proyecto Quinua. Boletín técnico no. 1. 1977.
Co-autores: A. Mujica, A. Narrea y J. Zevallos.
310. REAJUSTE DEL plan general de asesoría del IICA al Convenio IICA/SEA/FEDA. San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA. 1976. 129 p.
311. RESULTADOS PRELIMINARES de ensayos con coníferas exóticas en la región de Juan Vías, Costa Rica. Actividades en Turrialba (Costa Rica) 4(3):6-7. 1976.
Editado también en inglés.
312. RESUMEN DE la propuesta de reorganización para la Subsecretaría de Estado de Investigación, Extensión y Capacitación Agropecuaria (SEIECA). San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA. 1977. 22 p.
313. RISCH, S. Effect of variety of cowpea (*Vigna unguiculata* L.) on feeding preferences on three Chrysomelid beetles, *Cerotoma ruficornis rogeris*, *Diabrotica balteata* and *Diabrotica adelpha*. Turrialba (Costa Rica) 26(4):327-330. 1976.
314. ROJAS M., Z. y LIBOREIRO, E. Bibliografía sobre formas asociativas de producción en el agro. IICA. Documentación e Información Agrícola no. 53. 1977. 162 p.
315. ———. Estructura, políticas y programas agropecuarios de posgrado en Colombia. Bogotá, Oficina del IICA en Colombia, 1977. 46 p.
316. ROMERO, B. Estudio sobre la Producción y Comercialización del Café en la Zona de Barahona y Antecedentes para un Proyecto Regional Integrado. Santo Domingo, Rep. Dominicana, Instituto Interamericano de Ciencias Agrícolas, 1977. 47 p.
317. RUIZ, M. E. Comments on "Technological and ecological factors limiting the production of food of animal origin", by P. Solana, E. González Padilla and R. Garza. In Nutrition and Agricultural Development in the Tropics. Edited by N.S. Scrimshaw. New York, Plenum Press, 1976. pp. 148-150.
318. ———y RUIZ, A. Efecto del consumo de pasto verde sobre el consumo de pulpa de café y la ganancia de peso en novillos. Turrialba (Costa Rica) 27(1):23-28. 1977.
319. ———. New animal feeding systems based on the intensive use of tropical by-products. In International Symposium on Feed Composition, Animal Nutrient Requirements and Computerization of Diets, Logan, Utah, July 11-16, 1976. Proceedings. (En prensa).
320. SALAS, B., OTAZU, y VILCA, A. Enfermedades de la quinua en Puno. IICA-Fondo Simón Bolívar-PUNO-PERÚ. Proyecto Quinua. Boletín técnico no. 4. 1977. s.p.
321. SALAZAR, B. C. Catálogo de publicaciones periódicas de la Biblioteca del IICA-CIRA en 1977. Bogotá, Oficina del IICA en Colombia, 1977. 108 p. (591 ref.).
322. ———. Obras sobre administración. Bogotá, Oficina del IICA en Colombia, 1977. 13 p. (150 ref.).
323. SALAZAR, J. I. y NARANJO, G. Curso Semiología; unidad académica no. 4: Explotación del sistema linfático y de las mucosas. Bogotá, Oficina del IICA en Colombia, 1977. 11 p.
324. SALAZAR, J. J. y CARDOZO, A. Conservación, utilización y mejoramiento de los recursos genéticos del bovino criollo. Bogotá, Oficina del IICA en Colombia, 1976. 12 p.
Documento presentado en el Seminario sobre Razas de Bovinos Criollos, organizado por la Asociación Colombiana de Producción Animal, Ago. 18-20, 1976.

325. SANCHEZ, A. Análisis de la variancia para clasificaciones completas. Manual de uso. Convenio IICA/SEA/FEDA. Documento de trabajo, no. 38. 1977. 21 p.
326. ————. Análisis estadístico de experimentos en asociación de cultivos. Convenio IICA/SEA/FEDA. Documento de trabajo, no 41. 1977. 25 p.
327. ————. Publicación de resultados de investigación, comentarios desde el punto de vista estadístico. Convenio IICA/SEA/FEDA. Material Didáctico, no. 35. 1977. 46 p.
328. SANCHEZ, G. O. El sistema y el proceso para la ejecución de las asociaciones contempladas en el Plan General de Asesoría. San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA, 1976. 14 p.
329. ————. *et al.* Análisis de los mecanismos formales e informales de cooperación interinstitucional de la SEIECA. San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA, 1977. 32 p.
330. ————. *et al.* Definición de un esquema global del sistema para la toma de decisiones en planificación y programación para la SEIECA. San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA, 1977. 16 p.
331. ————. *et al.* Descripción de la situación actual sobre la toma de decisiones de planificación de la labor de la SEIECA. San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA, 1977. 52 p.
332. SANTANDER, C. y ALBERTINI, W. *Dalbergia cubitquitzensis* (D. Smith) Pittier, una nueva especie forestal para los trópicos. Turrialba (Costa Rica) 27(2):129-136. 1977.
333. SELLERS, S. The relationship between land tenure and agricultural production in Tucurrique, Costa Rica. Turrialba, Costa Rica, CATIE, 1976. 11 p.
334. SISTEMAS DE cultivo para pequeños agricultores; proyecto de manejo de malezas. Actividades en Turrialba (Costa Rica) 5(1-2):7-8. 1977.
Editado también en inglés.
335. SISTEMAS DE producción agrícola probados en el CATIE, Turrialba; aspectos agronómicos y económicos. Actividades en Turrialba (Costa Rica) 4(3):3-5. 1976.
Editado también en inglés.
También en: Reunión Anual del Programa Cooperativo Centroamericano para el Mejoramiento de Cultivos Alimenticios, 22a., San José, Costa Rica, 1976. Memoria. San José, Costa Rica, MAG/IICA, 1976. pp. K1-K11.
336. SOLEY, A. y MUÑOZ, H. Aspectos económicos de la producción de leche en Costa Rica. ALPA Memoria 11:137-138. 1976. (Compendio).
337. SOLORZANO V., N. y BORNEMISZA, E. Estudios del cultivo de yuca en Costa Rica. II. Composición química y producción de tres cultivares. Turrialba (Costa Rica) 26(3):261-264. 1976.
338. SORIA, J. Cocoa research in Latin America. In Simons, J., ed. Cocoa production, economic and botanic perspectives. New York, Proeger, 1976. pp. 299-337.
339. STAGNO, H. Esquema del Plan Nacional de Investigación y Extensión (PLANIE). San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA, 1976. 14 p.
340. ————, DELGADO, F. y CONTRERAS, D. Análisis de los mecanismos formales e informales de cooperación interinstitucional de la SEIECA con otros organismos (nacionales, internacionales y de países amigos). San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA, 1977. 52 p.
341. ————. Documentos complementarios a la metodología para elaboración del PLANIE. San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA, 1977. 15 p.
342. ————. Metodología para la elaboración del Plan Nacional de Investigación y Extensión (PLANIE). San Cristóbal, Rep. Dominicana, IICA/SEA/FEDA, 1977. 69 p.
343. ————. *et al.* Propuesta de metodología para evaluación del Subprograma de Tecnificación Agropecuaria del PIDAGRO. Proyectos 011-012-013 y 015. Fondo Especial para el Desarrollo Agropecuario, Santo Domingo, Rep. Dominicana, 1977. 81 p.
344. SUAREZ G., N. Comercialización. Quito, Oficina del IICA en Ecuador, 1976. 30 p.
Documento presentado en el Curso de Perfeccionamiento para Docentes de Colegios Agropecuarios de Sierra y Oriente, Quito, Jul. 26-Ago. 27, 1976.
345. SUAREZ MELO, M. Las empresas comunitarias campesinas en Panamá. IICA. Publicación Miscelánea, no. 153. s.f. 50 p.
346. ————. Las empresas comunitarias campesinas en Venezuela. IICA. Publicación Miscelánea, no. 152. s.f. 56 p.
347. SURIEL, T., HERNANDEZ, A. y PLA, D. Diagnóstico del mercadeo de maíz en la República Dominicana. SEA/IICA. Proyecto Integrado de Comercialización. Documento no. 29. 1977. 41 p.
348. TONINA, T. *et al.* Comercialización del arroz en el área geográfica del distrito de conservación y manejo de tierras y aguas Digua. Santiago, Oficina del IICA en Chile, 1976. 55 p.
Co-autores: B. Valle, F. López y P. Muñoz.
349. UNA INDUSTRIA forestal de millones de dólares derivada de la labor del CATIE. Actividades en Turrialba (Costa Rica) 4(4):3-4. 1976.
Editado también en inglés.
350. URIBE, M. y SALAZAR, B. C. Bibliografía de bibliografías forestales. Bogotá, Oficina del IICA en Colombia, 1976. 12 p. (111 ref.).
351. ————y SALAZAR, B. C. Entes corporativos de Colombia registrados para el AGRINTER. Bogotá. Oficina del IICA en Colombia, 1976. 20 p. (246 ref.).
352. ————. Títulos de publicaciones periódicas colombianas seleccionados para el AGRINTER. Bogotá. Oficina del IICA en Colombia, 1976. 8 p. (135 ref.).

353. URUGUAY. MINISTERIO DE AGRICULTURA Y PESCA E INSTITUTO INTERAMERICANO DE CIENCIAS AGRICOLAS. Proyecto de desarrollo regional agropecuario en Uruguay: Agroindustrias. Fondo Simón Bolívar, Informe no. 5. 1976. 17 p.
354. ———. Proyecto de desarrollo regional agropecuario en Uruguay: Antecedentes regionalización agropecuaria en Uruguay. Fondo Simón Bolívar, Informe no. 10. 1976. 33 p.
355. ———. Proyecto de desarrollo regional agropecuario en Uruguay: Asistencia técnica. Fondo Simón Bolívar, Informe No. 8. 1976. 17 p.
356. ———. Proyecto de desarrollo regional agropecuario en Uruguay: Comercialización. Fondo Simón Bolívar, Informe No. 7. 1976. 33 p.
357. ———. Proyecto de desarrollo regional agropecuario en Uruguay: Crédito agropecuario. Fondo Simón Bolívar, Informe No. 6. 1976. 13 p.
358. ———. Proyecto de desarrollo regional agropecuario en Uruguay: Estructura productiva y fundiaria. Fondo Simón Bolívar, Informe No. 4. 1976. 15 p.
359. ———. Proyecto de desarrollo regional agropecuario en Uruguay: Infraestructura vial. Fondo Simón Bolívar, Informe No. 3. 1976. 17 p.
360. ———. Proyecto de desarrollo regional agropecuario en Uruguay: Investigación agropecuaria. Fondo Simón Bolívar, Informe No. 9. 1976. 10 p.
361. ———. Proyecto de desarrollo regional agropecuario en Uruguay: Recursos humanos. Fondo Simón Bolívar, Informe No. 2. 1976. 18 p.
362. ———. Proyecto de desarrollo regional agropecuario en Uruguay: Recursos naturales. Fondo Simón Bolívar, Informe No. 1. 1976. 34 p.
363. ———. Proyecto de desarrollo regional agropecuario en Uruguay: Resumen de los estudios preliminares de la Región Noreste. Fondo Simón Bolívar. Informe No. 11, 1976. 43 p.
364. UTILIZACION DE modelos cuantitativos en el planeamiento y análisis de la investigación de sistemas agrícolas. Actividades en Turrialba (Costa Rica) 5(1-2):4-6. 1977.
Editado también en inglés.
365. VARGAS, B. Producción de quinua en Ayaviri. IICA-Fondo Simón Bolívar-PUNO-PERU. Proyecto Quinua. Boletín Técnico No. 8. 1977.
366. VEGA LUNA, M. Diagnóstico institucional de la Unidad de Programación Ganadera (UPG) del Ministerio de Agricultura de Colombia. Bogotá, Oficina del IICA en Colombia, 1976. 53 p.
367. ———. Diseño de proyectos de fortalecimiento institucional con el método del "marco lógico modificado". Bogotá, Oficina del IICA en Colombia, 1976. 24 p.
368. ———. Elementos de economía agraria. Bogotá, Oficina del IICA en Colombia, 1976. 21 p.
369. ———. Diagnóstico institucional del Comité Coordinador del Programa IICA-Trópicos de Colombia. Bogotá, Oficina del IICA en Colombia, 1977. 58 p.
370. VELEZ, J. Crédito Rural. 1a. ed. IICA. Libros y Materiales Educativos, no. 31. 1977. 306 p.
371. VICTOR, A. y FORSYTHE, W. M. Drenaje superficial por diferentes tamaños de camellones hechos a mano en un cultivo de maíz y frijol asociados. Turrialba (Costa Rica) 26(4):357-364. 1976.
372. VILLEGAS, C., comp. Camote, maní, soya en América Latina 1970-1975: una bibliografía parcialmente anotada. IICA. Documentación e Información Agrícola, no. 54. 1977. 90 p.
373. VILLEGAS, L. A. y RUIZ, M. E. Concentración de calcio y sebo en sustitutos de leche para terneros. ALPA Memoria 11:97. 1976. (Compendio).
374. ——— y RUIZ, M. E. Engorde de ganado con subproductos de caña de azúcar. 2. Sustitución de proteína por urea. Producción Animal Tropical (México) 1(1):56. 1976.
También en: ALPA Memoria 11:100. 1976. (Compendio).
375. VOHNOUT, K. y LASSO, M. Developing pasture-livestock feeding systems for the tropics.
Documento presentado en el International Symposium on Feed Composition, Animal Requirements and Computerization of Diets, 10., s.f.
376. ——— y JIMENEZ, C. Supplemental by-product feed in pasture livestock systems in the tropics. ASA. Special Publication 24. 1975.
377. ———. Planeamiento, análisis e interpretación de la investigación de sistemas. Turrialba, Costa Rica, CATIE, 1976. s.p.
Documento presentado en el Seminario sobre el Enfoque de Sistemas en la Investigación Pecuaria en el Istmo Centroamericano, Boquete, Panamá, Ago. 3-6, 1976.
378. ——— PERLA, F. y JEAN-POIS, Ch. Uso de melaza en ganado en pastoreo. I. Novillas de carne. ALPA Memoria 11:89. 1976. (Compendio).
379. ——— *et al* Predicting growth of grazing cattle. American Society of Animal Science, Annual Meeting, 69th, 1977. (Compendio).
380. YOPO, B. Reflexiones para una nueva educación. IICA. Publicación Miscelánea, no. 133. 1976. 29 p.
381. ZAPANA, J. Producción de quinua en Yunguyo. IICA-Fondo Simón Bolívar-PUNO-PERU. Proyecto Quinua. Boletín técnico no. 10. 1977.
382. ZANABRIA, E. y MUJICA, A. Plagas de la quinua en Puno. IICA-Fondo Simón Bolívar-PUNO-PERU. Proyecto Quinua. Boletín técnico no. 3. 1977.

MEETINGS, CONFERENCES, SEMINARS, ETC.

1. CURSO DE PREPARACION Y EVALUACION DE PRODUCTOS AGRICOLAS. Guatemala, IICA, Dirección Regional para la Zona Norte, 1977.
2. CURSO DE QUINUA, PUNO, PERU, 1977. Puno, Fondo Simón Bolívar-IICA, 1977. 25 sep.
3. CURSO INTENSIVO DE REDACCION TECNICA, LIMA, 1976. Informe. IICA. Informes de Conferencias, Cursos y Reuniones, no. 105. 1976. 68 p
4. CURSO NACIONAL DE ALMACENAMIENTO Y CONSERVACION DE GRANOS, QUITO, 1976. IICA. Informes de Conferencias, Cursos y Reuniones, no. 98. 1976. 80 p.
5. CURSO SOBRE PREPARACION Y EVALUACION DE PROYECTOS AGRICOLAS, BOGOTA, 1977. IICA. Informes de Conferencias, Cursos y Reuniones, no. 114. 1977. 2 v.
6. CURSO TALLER SOBRE ORGANIZACION DE EMPRESAS COMUNITARIAS CAMPESINAS, LIMA, MAYO 12-JUN. 21, 1975. Conferencias y documentos. IICA. Informes de Conferencias, Cursos y Reuniones, no. 66. 1976. 609 p.
7. REUNION DE LA COMISION ASESORA DEL PROGRAMA COOPERATIVO PARA EL DESARROLLO DEL TROPICO AMERICANO, 7a., MARACAIBO, VENEZUELA, 1976. IICA. Informes de Conferencias, Cursos y Reuniones, no. 97. 1976. 2 v.
8. REUNION DE LA COMISION ASESORA DEL PROGRAMA COOPERATIVO REGIONAL DE INVESTIGACION AGRICOLA, 7a., MONTEVIDEO, FEB. 16-20, 1976. Informe. Editado por H. Caballero. IICA. Informes de Conferencias, Cursos y Reuniones, no. 130. 1976. 64 p.
9. REUNION DE LOS PAISES DEL CONO SUR SOBRE PULGONES DEL TRIGO, 2a., SANTIAGO, CHILE, NOV. 23-26, 1976. Informe final de la Reunión, patrocinada por el IICA e INIA. Santiago, Oficina del IICA en Chile, 1977. 152 p.
10. REUNION SOBRE LA ROYA DEL CAFETO Y EL MEJORAMIENTO DE LA CAFICULTURA EN LOS PAISES DE LA ZONA NORTE. IICA. Informes de Conferencias, Cursos y Reuniones, no. 135. 1977. 1 v.
11. REUNION TECNICA SOBRE DESARROLLO DE MODELOS DE PLANIFICACION UNIVERSITARIA EN CIENCIAS AGRICOLAS, BOGOTA, OCT. 25-28, 1976. Conferencias y documentos. IICA. Informes de Conferencias, Cursos y Reuniones, no. 77. 1976. p. irr.
12. SEMINARIO SOBRE FOMENTO DE FORMAS ASOCIATIVAS DE PRODUCCION EN EL MEDIO RURAL, HEREDIA, COSTA RICA, JUL. 19-23, 1976. San José, Costa Rica, DSE/IICA, 1977. 139 p.
13. SEMINARIO SOBRE LA EDUCACION AGRICOLA PARA EL DESARROLLO RURAL Y ECONOMICO, BOGOTA, ABR. 25-27, 1977. Informe. IICA. Informes de Conferencias, Cursos y Reuniones, no. 113. 1977. p. irr.
14. SEMINARIO SOBRE METODOLOGIA DE EVALUACION DE PROYECTOS AGROPECUARIOS CON ENFASIS EN PROGRAMAS DE INVESTIGACION, MONTEVIDEO, FEB. 16-20, 1976. Informe editado por S. Miragem y H. Caballero. IICA. Informes de Conferencias, Cursos y Reuniones, no. 118. 1977. (En prensa).
15. SEMINARIO SOBRE PRODUCCION DE SEMILLAS FOLIAJERAS. MARACAY, VENEZUELA, 1976. Informe. IICA. Informes de Conferencias, Cursos y Reuniones, no. 99. 1976. 215 p.
16. SEMINARIO SOBRE PROYECTOS DE DESARROLLO AGRICOLA, TEGUCIGALPA, SEPT. 23-24, 1976. Memoria. Tegucigalpa, D.C., Oficina del IICA en Honduras, 1976. 143 p.
17. SEMINARIO SOBRE TRANSFERENCIA DE TECNOLOGIA AGRICOLA, MONTEVIDEO, NOV. 16-19, 1976. Informe editado por A. Marzocca. IICA. Informes de Conferencias, Cursos y Reuniones, no. 112. 1976. 196 p.
18. SIMPOSIO INTERNACIONAL SOBRE PLANTAS DE INTERES ECONOMICO EN LA FLORA AMAZONICA, BELEM, BRASIL, MAYO 29-JUN. 2, 1972. Edit. Carmen Villegas. IICA. Informes de Conferencias, Cursos y Reuniones, no. 93. 1976. 292 p.

PERIODIC PUBLICATIONS

1. BOLETIN DEL CAIJR
Volumen I - nos. 1 y 2, 1976
Volumen II - nos. 1, 1977
Ed.: Jaime Cusicanqui
2. BOLETIN INFORMACION SOBRE JUVENTUD RURAL
Volumen I - nos. 3 y 4, 1976
Volumen II - nos. 1 y 2, 1977
Ed.: Jaime Cusicanqui
3. BOLETIN INTERNO
Nos. 792 a 842 (junio 1976-julio 1977)
Ed.: Isberto Montenegro
4. DESARROLLO DEL TROPICO AMERICANO
Nos. 17 y 18, 1976
Nos. 19 y 20, 1977
Ed.: Carmen Villegas
5. DESARROLLO RURAL EN LAS AMERICAS
Volumen 8, nos. 2 y 3, 1976
Ed.: Fernando Rulfo
6. DOCUMENTACION E INFORMACION PARA EL DESARROLLO AGRICOLA
Volumen IV, nos. 2, 3 y 4, 1976
Volumen V, nos. 1/2, 1977
Ed.: Orlando Arboleda-Sepúlveda
7. HOJA INFORMATIVA DEL BANCO DE DATOS DE BIBLIOGRAFIAS AGRICOLAS DE AMERICA LATINA Y EL CARIBE
No. 9, 1976
Ed.: María José Galrao

8. **EL IICA EN AMERICA**
 Volumen 2, nos. 3 y 4, 1976
 Volumen 3, nos. 1 y 2, 1977
 Ed.: Carlos J. Molestina
 Isberto Montenegro
9. **INDICE AGRICOLA DE AMERICA LATINA Y EL CARIBE**
 Volumen 11, nos. 3/4, 1976
 Volumen 12, nos. 1, 1977
 Ed.: Hugo Cáceres Ramos
 Orlando Arboleda-Sepúlveda
10. **INFORMACION AL DIA. ALERTA.**
 Agronomía No. 3. Legislación Forestal en los países que forman parte del Programa IICA-Trópicos. 1977.
 Ed.: Carmen Villegas
11. **REVISTA TURRIALBA**
 Volumen 26, nos. 3 y 4, 1976
 Volumen 27, nos. 1 y 2, 1977
 Ed.: Adalberto Gorbitz
12. **SERVICIOS DE ALERTA. INFORMACION AL DIA: CIENCIAS FORESTALES**
 Nos. 8 y 9, 1976
 Nos. 10 y 11, 1977
 Ed.: Carmen Villegas
13. **SERVICIOS DE ALERTA. INFORMACION AL DIA: GANADERIA**
 Nos. 8 y 9, 1976
 Nos. 10 y 11, 1977
 Ed.: Carmen Villegas

Appendix V.
INTERNATIONAL PROFESSIONAL PERSONNEL

INTERNATIONAL PROFESSIONAL PERSONNEL*

Name	Nationality	Academic Degree or Profession	Position	Location
Acosta, Jaime	Colombia	Economist	Internal Auditor	San Jose, Costa Rica
Acosta, Ramiro	Bolivia	Editor	Art Editor	San Jose, Costa Rica
Aguirre, Juan A.	Cuba	Ph.D.	Office Director, Agricultural Programming Specialist	Managua, Nicaragua
Aitken-Soux, Percy ¹	Bolivia	Ph.D.	Head, Operative Programming Division	San Jose, Costa Rica
Albuquerque, Héctor	Uruguay	Ph.D.	Programming Director	San Jose, Costa Rica
Alvarez, Hugo	Bolivia	Mag. Agr.	Forest Development Specialist	Lima, Peru
Alvear, Gualberto	Ecuador	Lic. Bibliot.	Documentalist	San Jose, Costa Rica
Alvim, Paulo de T. ²	Brazil	Ph.D.	Plant Physiologist	Itabuna, Brazil
Amézquita, Rafael ³	Colombia	Ph.D.	Post-Harvesting Crop Losses Specialist	Mexico, D.F., Mexico
Ansorena, Ignacio	Uruguay	Ph.D.	Office Director, Agricultural Extension Specialist	Quito, Ecuador
Araujo, José Emilio G.	Brazil	Dr. Agr.	Director General	San Jose, Costa Rica
Araujo, Miguel A.	El Salvador	Mag. Sc.	Advisor to the Regional Director, Agricultural Projects Specialist	Guatemala, Guatemala
Arboleda, Orlando	Colombia	M.L.S.	Information and Documentation Specialist	San Jose, Costa Rica
Arias, Carlos Luis	Costa Rica	M.A.	Agricultural Communications Specialist	Guatemala, Guatemala
Bareiro, José Luis ⁴	Paraguay	Mag. Sc.	Projects Planning and Evaluation Specialist	San José, Costa Rica
Barrios, José	Chile	M.S.	Land and Water Management and Conservation Specialist	Rio de Janeiro, Brazil
Barreyro, Héctor	Argentina	Ph.D.	Agricultural Economist	Georgetown, Guyana
Barrios, Mario Paes de	Brazil	M.S.	Office Director, Rural Development Specialist	La Paz, Bolivia
Bazán, Rufo ⁵	Bolivia	Ph.D.	Soils Scientist	Turrialba, Costa Rica
Beraja, Isidoro	Honduras	Ing. Agr.	Agricultural Production Planning Specialist	Panama, Panama
Blair, Enrique	Colombia	Ing. Agr.	External Coordination Advisor	San Jose, Costa Rica
Blasco, Mario	Spain	Ph.D.	Advisor to the Regional Director, Agricultural Research Specialist	Lima, Peru
Brun, Marciano ⁶	Paraguay	Mag. Sc.	Agricultural Credit Specialist	Rio de Janeiro, Brazil
Bucheli, Renán ⁷	Ecuador	M.S.	Agricultural Marketing Specialist	Mexico, D.F., Mexico
Buitrón, Víctor Hugo ⁸	Ecuador	Mag. Agr.	Agricultural Extension Specialist	Bogota, Colombia

1 Began May 12, 1977

2 Until April 1, 1977

3 Began January 31, 1977

4 Agricultural Economist in Port-au-Prince, Haiti until December 31, 1976

5 CATIE Personnel

6 Until June 1, 1977

7 Began January 7, 1977

8 In Asuncion, Paraguay until December 31, 1976

* Quotas Funds

Name	Nationality	Academic Degree or Profession	Position	Location
Caballero, Hernán	Chile	Ph.D.	Agricultural Research Specialist	Montevideo, Uruguay
Cabral, José Irineu	Brazil	Economist	President of EMBRAPA	Brasilia, D.F., Brazil
Cáceres, Hugo	Colombia	M.L.S.	Head, Documentation and Information Unit	San Jose, Costa Rica
Cardozo, Armando	Bolivia	Ph.D.	Livestock Development Specialist	Bogota, Colombia
Cáseres, Ernesto H.	Costa Rica	Ph.D.	Agricultural Education Specialist	Santiago, Chile
Castronovo, Alfonso	Argentina	M.S.	Head, Evaluation Division	San Jose, Costa Rica
Cetrángolo, Miguel A.	Uruguay	M.Ec.	Agricultural Economist	Asuncion, Paraguay
Clifford, Roy A.	U.S.A.	Ph.D.	Advisor to the Regional Director, Rural Social Development Specialist	
Cohan, Hugo	Argentina	Ph.D.	Agricultural Economist	Montevideo, Uruguay
Coto, Rogelio	Costa Rica	Communicator	Head of PIADIC	San Jose, Costa Rica
Cubillos, Gustavo ¹	Chile	Ph.D.	Agrostologist	Turrialba, Costa Rica
Cusicanqui, Jaime	Bolivia	Communicator	Executive Secretary, Rural Youth Program and Coordinator, Scientific and Professional Associations	San Jose, Costa Rica
Chaverra, Hernán	Colombia	Ph.D.	Regional Agricultural Planning Specialist	Caracas, Venezuela
Chávez, Oswaldo	Peru	Ing. Agr.	Land and Water Management and Conservation Specialist	Tegucigalpa, Honduras
Damtoft, Finn	Canada	M.A.	Information and Documentation Specialist	San Jose, Costa Rica
Deaton, Oliver ¹	U.S.A.	Ph.D.	Zootechnician	Turrialba, Costa Rica
De la Cruz, Matilde	Costa Rica	Editor	Editor, Teaching Texts and Materials	San Jose, Costa Rica
Díaz Bordenave, Juan	Paraguay	Ph.D.	Agricultural Communications Specialist	Rio de Janeiro, Brazil
Donoso, Augusto	Chile	Ing. Agr.	Agricultural Production Planning Specialist	Bogota, Colombia
Elgueta, Manuel ¹	Chile	Ing. Agr.	Director of CATIE	Turrialba, Costa Rica
Erickson, Ana María de	Guatemala	Librarian	Executive Secretary of AIBDA	Turrialba, Costa Rica
Erickson, Arnold L. ¹	U.S.A.	M.S.	Research Secretariat	Turrialba, Costa Rica
Fargas, José ²	Ecuador	Ph.D.	Plant Physiologist	Turrialba, Costa Rica
Febres, Abraham	Perú	M.S.	Regional Development Specialist	La Paz, Bolivia
Fernández, Angel	Argentina	Librarian	In charge, Documentation Center	Buenos Aires, Argentina
Fernández, Hugo	Uruguay	M.S.	Agricultural Education Specialist	San Jose, Costa Rica
Fernández, Carlos E. ²	Guatemala	Ph.D.	Coffee Specialist	San Salvador, El Salvador
Ferreiro, Carlos E.	Uruguay	Accountant	Head, Accounting Division	San Jose, Costa Rica
Fiori, Ernani María ³	Brazil	Mag. Sc.	Office Director, Agricultural Programming Specialist	Asuncion, Paraguay
Fletschner, Carlos	Paraguay	Ph.D.	Agricultural Marketing Specialist	Buenos Aires, Argentina
Flores, Luis ⁴	Peru	Lic. Cien. Pol. y Soc.	Social Development Specialist	Mexico, D.F., Mexico
Forsythe, Warren	Jamaica	Ph.D.	Office Director, Land and Water Management Conservation Specialist	Bridgetown, Barbados
Franco, Alberto	Colombia	M.S.	Agricultural Planning Specialist	San Jose, Costa Rica
Frigerio, Norberto	Argentina	Ph.D.	Agricultural Marketing Specialist	Rio de Janeiro, Brazil
Galrao, María José	Brazil	Librarian	Information and Documentation Specialist	Turrialba, Costa Rica

¹ CATIE, Personnel

² Leave of absence without pay since may 1, 1977

³ In Brasilia, D.F., Brazil until December 31, 1977

⁴ Began March 22, 1977

Name	Nationality	Academic Degree or Profession	Position	Location
Garcés, Carlos	Colombia	Ph.D.	Agricultural Education Specialist	Mexico, D.F., Mexico
García, Ubaldo	Argentina	Ing. Agr.	Associate Deputy Director General, Planning	San Jose, Costa Rica
García, Noel	Nicaragua	M.A.	Office Director, Rural Social Development Specialist	Panama, Panama
Gastal, Edmundo	Brazil	M.S.	Director of EMBRAPA	Brasilia, D.F., Brazil
Genis, Marigold de	United Kingdom	B.A.	English Translator and Editor	San Jose, Costa Rica
Gil de Muro, Julio ¹	Argentina	Med. Vet.	Rural Development Specialist	Bogota, Colombia
Gil Turnés, Benjamín	Uruguay	Ph.D.	Agricultural Education Specialist	Asuncion, Paraguay
Gonzalez, Tomás	Bolivia	M.S.	Agricultural Economist	Rio de Janeiro, Brazil
González, Sergio	Chile	Ing. Agr.	Cadastral Specialist	Caracas, Venezuela
Gorbitz, Adalberto	Peru	Ing. Agr.	Head, Technical Editing Unit	San Jose, Costa Rica
Grajales, Guillermo	Colombia	Ing. Com.	Agricultural Project Specialist	Lima, Peru
Graeff, Allan H.	U.S.A.	M.A.	Community Enterprises Specialist	Port-au-Prince, Haiti
Guerra, Guillermo	Colombia	M.S.	Director, Simon Bolivar Fund	San Jose, Costa Rica
Hepp, Ricardo ²	Chile	Ing. Agr.	Agricultural Education Specialist	Santiago, Chile
Hernández, Aureljo	Cuba	C.P.	Head, Services Division	San Jose, Costa Rica
Infante, Mario A. ³	Colombia	Mag. Sc.	Agricultural Economist	San Salvador, El Salvador
Jara, José O.	Paraguay	Mag. Sc.	Agricultural Economist	Resistencia, Argentina
Julien, Jean Nicot	Haiti	Mag. Sc.	Agricultural Products Specialist	Kingston, Jamaica
La Gra, Jerry	U.S.A.	M.A.	Agricultural Marketing Specialist	Sto. Domingo, Dominican Rep.
Lazos, Flavio	Mexico	M.S.	Action Plan Coordinator	Guatemala, Guatemala
Liboreiro, Ernesto	Argentina	Ph.D.	Agricultural Extension Spec.	Bogota, Colombia
Lombardo, Heraclio A.	Panama	Ph.D.	Community Enterprises Specialist	San Jose, Costa Rica
MacDonald, Malcolm H.	U.S.A.	Ph.D.	Director, Personnel Office	San Jose, Costa Rica
MacLean, Alejandro	Peru	Ing. Agr.	Associate Deputy Director General, Operations	San Jose, Costa Rica
Madrid, Carlos	Peru	Ing. Agr.	Agricultural Communications Specialist	Montevideo, Uruguay
Maestre, Leonardo	Peru	Ing. Agr.	Deputy Director General	San Jose, Costa Rica
Malugani, María D.	Uruguay	M.L.S.	Regional Development Specialist	Resistencia, Argentina
Marull, José D.	Chile	Ph.D.	Director of CIDIA	San Jose, Costa Rica
Marzocca, Angel	Argentina	Ing. Agr.	Office Director, Rural Development Specialist	Santiago, Chile
Mendoza, Luis A.	Bolivia	Ph.D.	Advisor to the Regional Director/Development Management Specialist	Montevideo, Uruguay
Merea, Agustín	Peru	Ing. Civil	Advisor to the Regional Director, Rural Development Management Specialist	Lima, Peru
Miranda, Heleodoro	Ecuador	Mag. Agr.	Land and Water Management and Conservation Specialist	Buenos Aires, Argentina
Miragem, Samuel	Brazil	Ing. Agr.	Agricultural Research Specialist	San Salvador, El Salvador
Molestina, Carlos J.	Peru	Mag. Sc.	Agricultural Projects Specialist	Montevideo, Uruguay
Miragem, Samuel	Brazil	Ing. Agr.	Director, Public Information Office	San Jose, Costa Rica
Montenegro, Isberto	Costa Rica	Journalist	Press Officer	San Jose, Costa Rica
Montero, Emilio	Chile	M.S.	Action Plan, Coordinator	Montevideo, Uruguay
Montoya, Jorge M.	Peru	Dr. Sc. B.	Agricultural Economist	Montevideo, Uruguay
Montoya, Luis A.	Peru	Ph.D.	Action Plan, Coordinator	Sto. Domingo, Dominican Rep.
Morales, Héctor ⁴	Chile	M.Sc.	Agricultural Economist	Rio de Janeiro, Brazil
			Office Director, Agricultural Research Specialist	San Jose, Costa Rica
			Agricultural Planning Specialist	

¹ December 6, 1976

² Leave of absence without pay since October 28, 1976

³ In Tegucigalpa, Honduras until December 31, 1976

⁴ In Santo Domingo, Dominican Republic until March 31, 1977

Name	Nationality	Academic Degree or Profession	Position	Location
Morales, Efraím	Costa Rica	M.R.P.	Regional Director, Northern Zone	Guatemala, Guatemala
Moran, Michael J. ¹	U.S.A.	M.S.	Special Advisor, Foreign Affairs	Washington, D.C.
Müller, Ludwig ²	Germany	Dr. Rer. Nat.	Agricultural Education Specialist	Porto Alegre, Brazil
Muñoz, Víctor M.	U.S.A.	Bus. Admin.	Personnel Officer	San Jose, Costa Rica
Muñoz, Héctor ³	Mexico	Ph.D.	Zootechician, Head, Department of Tropical Animal Husbandry Dept.	Turrialba, Costa Rica
Muñoz-Reyes, Jaime	Bolivia	Agr.	Tropics Development Specialist	Quito, Ecuador
Murcia, Héctor	Colombia	M.S.	Agricultural Economist	San Jose, Costa Rica
Nadal, Francisco	Bolivia	Ph.D.	Rural Development Management Specialist	Buenos Aires, Argentina
Naranjo, Gerardo	Ecuador	Ph.D.	Agricultural Education Specialist	Bogota, Colombia
Ogle, Richard ⁴	U.S.A.	Ph.D.	Rural Development Management Specialist	Sto. Domingo, Dominican Rep.
Oliart, Francisco	Peru	Dr. Der.	Head of CIRA, and Agrarian Reform and "Campesino" Organization Specialist	Bogota, Colombia
Ortiz, Egas Jaime	Ecuador	M.S.	Community Enterprises Specialist	Asuncion, Paraguay
Páez, Gilberto	Paraguay	Ph.D.	Evaluation Specialist	San Jose, Costa Rica
Páez, Pascual	Paraguay	Lic. Pedag.	Community Enterprises Specialist	Tegucigalpa, Honduras
Pando, José Luis	Canada	M.Sc.	Agricultural Marketing Specialist	Caracas, Venezuela
Paulette, Miguel	Peru	M.S.	Director, Cooperative Programs	San Jose, Costa Rica
Pérez, Manuel	Chile	Accountant	Head, Organization Division	San Jose, Costa Rica
Pinto, João Bosco G.	Brazil	Ph.D.	Advisor to the Regional Director, Rural Social Development Specialist	Sto. Domingo, Dominican Rep.
Pinchinat, Antonio	Haiti	Ph.D.	Regional Director, Antilles Zone	Sto. Domingo, Dominican Rep.
Quiroga, Víctor	Bolivia	Mag. Sc.	Head, Statistics and Computer Unit	San Jose, Costa Rica
Ramsay, Jorge	Chile	Ing. Agr.	Office Director, Agricultural Extension Specialist	Caracas, Venezuela
Rangel, Jefferson F.	Brazil	M.S.	Director General's Representative in the United States of America and Canada	Washington, D.C., U.S.A.
Ramírez, Pedro ⁵	Colombia	Ing. Agr.	Tropics Development Specialist	Belem, Brazil
Ras, Norberto	Argentina	M.A.	Office Director, Agricultural Economist	Buenos Aires, Argentina
Ringuelet, Julio A.	Argentina	Ing. Agr.	Office Director, Agricultural Credit Specialist	San Salvador, El Salvador
Ríos, Pompeyo	Venezuela	Dr. Ing. Agr.	Regional Director, Andean Zone	Lima, Peru
Rodríguez, Manuel	Chile	Ing. Agr.	Regional Director, Southern Zone	Montevideo, Uruguay
Rosado, Humberto	Mexico	Ph.D.	Office Director, Agricultural Extension Specialist	Mexico, D.F., Mexico
Rosero, Pablo ³	Ecuador	Mag. Agr.	Forester	Turrialba, Costa Rica
Ruiz, Manuel ³	Peru	Ph.D.	Nutritionist	Turrialba, Costa Rica
Rulfo, Fernando	Mexico	M.Ed.	Agricultural Communications Specialist	San Jose, Costa Rica
Salinas, Luis	Peru	Ing. Agr.	Agricultural Communications Specialist	Lima, Peru

1 In San Jose, Costa Rica, until August 20, 1976

2 Until February 25, 1977

3 CATIE Personnel

4 Until October 25, 1976

5 Until March 1, 1977

Name	Nationality	Academic Degree or Profession	Position	Location
Salvadó, Eduardo	Spain	M.Sc.	Office Director, Rural Social Development Specialist	Port-au-Prince, Haiti
Sandoval, Leopoldo	Guatemala	Ing. Agr.	Agrarian Reform Specialist	Guatemala, Guatemala
Schlottfeldt, Carlos	Brazil	Ph.D.	Advisor to the Regional Director, Agricultural Education Specialist	Montevideo, Uruguay
Shurtleff, Don L.	U.S.A.	B.A.	Financial Advisor and Treasurer	San Jose, Costa Rica
Soikes, Raúl	Peru	Ph.D.	Office Director, Agricultural Education Specialist	Kingston, Jamaica
Soria, Jorge ¹	Ecuador	Ph.D.	Geneticist	Turrialba, Costa Rica
Stone, Pablo	U.S.A.	M.A.	Office Director, Agricultural Production Specialist	Georgetown, Guyana
Suárez de Castro, Fernando	Colombia	Mag. Agr.	Director, Operations Analysis	San Jose, Costa Rica
Suárez, Nelson	Colombia	Ing. Agr.	Agricultural Marketing Specialist	Quito, Ecuador
Sylvester, Francisco	Peru	M.F.S.	Agricultural Education Specialist	Caracas, Venezuela
Sylvain, Pierre G. ¹	Haiti	Ph.D.	Horticulturist, Emeritus	Turrialba, Costa Rica
Tapia, Mario	Peru	Ph.D.	High Andes Agricultural Development Specialist	La Paz, Bolivia
Tonina, Teodoro	Argentina	Dr. Cien. Agr.	Agricultural Programming Specialist	Santiago, Chile
Toro, Guillermo	Chile	Ing. Agr.	Agricultural Economist	Caracas, Venezuela
Torrealba, Pablo	Chile	Ph.D.	Agricultural Marketing Specialist	San Jose, Costa Rica
Torres, José A.	Costa Rica	Ing. Agr.	Action Plan Coordinator	San Jose, Costa Rica
Torres, Hugo	Colombia	M.S.	Action Plan Coordinator	San Jose, Costa Rica
Uribe, German	Ecuador	Ing. Agr.	Agricultural Marketing Specialist	Lima, Peru
Urizar, Marco T. ²	Guatemala	Ing. Agr.	Office Director, Regional Planning Specialist	Tegucigalpa, Honduras
Vázquez, Roberto E.	Uruguay	Ing. Agr.	Agricultural Education Specialist	Managua, Nicaragua
Vallés, Raúl	Peru	Ph.D.	Agricultural Economist	Buenos Aires, Argentina
Vega Luna, Mayo ³	Nicaragua	Ing. Agr.	Land and Water Management and Conservation Specialist	Santiago, Chile
Veras, Arnaldo	Brazil	M. Sc.	Development Management Specialist	Guatemala, Guatemala
Vergelín, César ⁴	Argentina	B.C.E.	Agricultural Planning Specialist	Brasilia, D.F., Brazil
Vidiella, Teófilo ⁵	Uruguay	Ph.D.	Agricultural Planning Specialist	Quito, Ecuador
Viera, Pedro Merçon	Brazil	Ing. Agr.	Agricultural Economist	Managua, Nicaragua
Vigués, Enrique	Spain	Ing. Agr.	Special Advisor to the IICA/EMBRATER Agreement	Brasilia, D.F., Brazil
Villavisencio, Mauro	Peru	Ph.D.	Head, Director General's Cabinet	San Jose, Costa Rica
Villegas, Carmen	Uruguay	Ing. Agr.	Office Director, Agricultural Production Specialist	Bogota, Colombia
Vohnout, Karel ¹	Ecuador	Librarian	American Tropics Documentalist	Turrialba, Costa Rica
Wahab, Abdul ⁶	U.S.A.	Ph.D.	Nutritionist	Turrialba, Costa Rica
Yopo, Boris	Chile	Ph.D.	Agricultural Research Specialist	Kingston, Jamaica
		M.S.	Agricultural Education Specialist	Lima, Peru

1 CATIE Personnel

2 Until March 31, 1977

3 In Bogota, Colombia until February 19, 1977

4 Began November 3, 1976

5 From October 1 to December 5, 1976

6 Began January 30, 1977

INTERNATIONAL PROFESSIONAL PERSONNEL TEMPORARY *

Name	Nationality	Academic Degree or Profession	Position	Location
Alba, Vicente ¹	Colombia	M.S.	Communications Specialist	Sto. Domingo, Dom. Rep.
Agudelo, Fernando	Colombia	Ph.D.	Entomologist	Sto. Domingo, Dom. Rep.
Alvarez, Aníbal	Colombia	Lic. C.E.	Educ. Psychologist	Bogota, Colombia
Arriagada, Patricio ²	Chile	Mg. Sc.	Agricultural Extension Specialist	Sto. Domingo, Dom. Rep.
Arrunátegui, Humberto A. ³	Peru	Ing. Agr.	Agricultural Irrigation Specialist	Barreiras, Bahía, Brazil
Barthley, Basil G. D.	United Kingdom	Ph.D.	Geneticist	Itabuna, Bahía, Brazil
Becker Cabezas, Alfredo ⁴	Chile	Ing. Agr.	Agricultural Marketing Specialist	Port-au-Prince, Haiti
Bornemisza, Elemer	Costa Rica	Ph.D.	UCR/IICA Contract Coordinator; Soils Professor and Advisor	San Jose, Costa Rica
Bresciani, Juan Carlos ⁵	Chile	M.S.	Seed Production and Classification Specialist	Sto. Domingo, Dom. Rep.
Camacho, Angel Fco. ⁶	Peru	Ing. Agr.	Agricultural Projects Specialist	Guatemala, Guatemala
Campuzano, R. John ⁷	Ecuador	Ing. Agr.	Agricultural Projects Planning and Evaluation Specialist	Managua, Nicaragua
Cassalett, Clímaco	Colombia	Ph.D.	Cereal Improvement Specialist	Sto. Domingo, Dom. Rep.
Castro, Dante ⁸	Peru	Col.	Associated Enterprises Specialist	Colonia Bernardino Caballero, Conendiyu, Paraguay
Cevallos, Francisco	Ecuador	Ing. Agr.	Resources for Development Specialist	Quito, Ecuador
Chang-Navarro, Lorenzo ⁹	Peru	M.S.	Land and Water Conservation and Management Specialist	Recife, PA, Brazil
Dysli, Raúl ¹⁰	Guatemala	M.S.A.	Animal Husbandry Specialist	Catacamas, Honduras
Ferrara, Miguel A. ¹¹	Paraguay	Lawyer	Communications Specialist	Sto. Domingo, Dom. Rep.
Frías, Hernán ¹²	Chile	Ing. Agr.	Agricultural Extension Coordinator	Sto. Domingo, Dom. Rep.
Fuenzalida, Hernán	Chile	L.L.M.	Institutional Development Specialist	Managua, Nicaragua
García Munévar, Mario	Colombia	M.S.	Agricultural Programmer	Port-au-Prince, Haiti
Gartner, Alvaro	Colombia	Ph.D.	Coordinator, Agricultural Research Programs	Sto. Domingo, Dom. Rep.
González, Hernán ¹³	Colombia	Ing. Agr.	Agronomy Engineer	San Salvador, El Salvador
Grondín, Marcelo	Bolivia	Dr. Cien. Soc.	Specialist in the Organization of Agricultural Associations	Sto. Domingo, Dom. Rep.
Guerrero, Francisco H. ¹⁴	Chile	Lic. C.E.	Finance Administration Specialist	Managua, Nicaragua
Herrera, J. Eugenio	Chile	M.P.I.A.	Administration Specialist	San Jose, Costa Rica
Ibarra, A. Edgar L. ¹⁵	Guatemala	M.Sc.	Agricultural Education Specialist	Catacamas, Honduras

1 Began November 23, 1976

2 Began April 15, 1977

3 Began March 2, 1977

4 April 1, 1977

5 Began November 17, 1976

6 In San Jose, Costa Rica since April 1, 1977

7 Began April 12, 1977

8 Began March 31, 1977

9 Began November 3, 1976

10 Began March 24, 1977

11 Until July 14, 1976

12 Until September 14, 1976

13 Until April 15, 1977

14 Began October 15, 1976

15 Began March 29, 1977

* Non-Quota Fund

Name	Nationality	Academic Degree or Profession	Position	Location
Iturbide, Angel Ma.	Guatemala	Mag. Sc.	Agricultural Projects Specialist	Sto. Domingo, Dom. Rep.
Jiménez, Jesús H. ¹	Colombia	Mag. Sc.	Documentalist	San Jose, Costa Rica
León, Carlos Ulises	Peru	Mag. Sc.	Agricultural Extension Specialist	San Fco., Dom. Rep.
López, Rubio Armando ²	México	Ing. Agr. Ind.	Project Planning and Evaluation Specialist	San Jose, Costa Rica
Marambio, Juan L. ³	Chile	Ing. Agr.	Agricultural Planning Specialist	San Jose, Costa Rica
Matute, Enrique	Peru	Ing. Agr.	Land and Water Management and Conservation Specialist	Petrolina, Pernambuco, Brazil
Mendoza, Gilberto	Colombia	Economist	Agricultural Marketing Specialist	Sto. Domingo, Dom. Rep.
Morales, Domingo A.	Chile	B.C.L.	Computer Specialist	San Jose, Costa Rica
Montiel, Raúl ⁴	Paraguay	M.C.	Rural Administration Specialist	Santiago, Veraguas, Panamá
Morón, Isaac	Uruguay	Ing. Agr.	Specialist, Management and Organization of Training Centers	Sto. Domingo, Dom. Rep.
Nasta, Hugo	Argentina	Ing. Agr.	Agricultural Extension Specialist	Sto. Domingo, Dom. Rep.
Navas, Bolívar Gil	Ecuador	Mag. Agr.	Specialist in Education and Social Sciences	Quito, Ecuador
Paniagua, César ⁵	Dominican Rep.	Ph.D.	Agricultural Production Specialist	Cristiana, Jamaica
Paz, Pablo	Honduras	M.Sc.	Plant Breeding Specialist	Sto. Domingo, Dom. Rep.
Paulet, Manuel	Peru	Ph.D.	Soil Conservation Specialist	Sto. Domingo, Dom. Rep.
Pereira, Egon Lucas,	Brazil		Systems Analyst	Itabuna, Bahía, Brazil
Piñero, Martín ⁶	Argentina	Ph.D.	Coordinator, Transfer of Technology Research Project	Bogota, Colombia
Rea, Julio ⁷	Bolivia	Ing. Agr.	Andean Crops Specialist	Puno, Peru
Reyes, Armando ⁸	Honduras	M.S.	Agricultural Projects Specialist	Managua, Nicaragua
Roberts, Pablo ⁹	U.S.A.	Ph.D.	Head, Management Projects	San Jose, Costa Rica
Robinson, Philip ¹⁰	United Kingdom		Agricultural Engineering Specialist	Georgetown, Guyana
Rodríguez, Julia Inés	Uruguay	M.L.S.	Documentalist	San Jose, Costa Rica
Roldán, José Ramón ¹¹	Argentina	M.S.	Agricultural Marketing Specialist	Salvador, Bahía, Brazil
Romanella, Carlos	Argentina	Ing. Agr.	Specialist in Land and Water Management and Conservation	Santiago, Chile
Sánchez, Alvaro	Uruguay	Ing. Agr.	Experimental Design and Statistical Analysis Specialist	Sto. Domingo, Dom. Rep.
Santiváñez, Hernán	Peru	Ing. Agr.	Agricultural Projects Specialist	Quito, Ecuador
Sariego, Jorge ¹²	Chile	Sociologist	Rural Social Development Specialist	San Salvador, El Salvador
Scarsi, Juan Carlos	Uruguay	Ph.D.	Advisor and Specialist in Animal Production	Brasilia, D.F., Brazil
Servy, Elsa C. ¹³	Argentina	Ph.D.	Bio-Mathematics Specialist	San Salvador, El Salvador
Stagno, Horacio	Argentina	M.S.	Agricultural Economist	Sto. Domingo, Dom. Rep.
Tejero, Luis	Peru	Ing. Agr.	"Campesino" Organization Specialist	Barreiras, Bahía, Brazil
Tejeda, Ramón ¹⁴	Chile	Ph.D.	Research Systems Specialist	Brasilia, D.F., Brazil
Trigo, Eduardo ¹⁵	Argentina	M.S.	Transfer of Technology Research Specialist	Bogota, Colombia
Vásquez, Arturo ¹⁶	Peru	M.C.	Integral Development Specialist	Marcala, Honduras
Valle, Armando J. ¹⁷	Honduras	M.S.	Agricultural Extension Specialist	Catcamas, Honduras

- 1 Until January 29, 1977
- 2 Began August 16, 1976
- 3 Began February 1, 1977
- 4 Began September 3, 1976
- 5 Began June 30, 1977
- 6 Began November 28, 1976
- 7 Began October 1, 1976
- 8 Began January 1, 1977
- 9 Began December 28, 1976
- 10 Began March 30, 1977
- 11 Began November 30, 1976
- 12 Until April 15, 1977
- 13 Began January 1, 1977
- 14 Began September 1, 1976
- 15 Began December 28, 1976
- 16 Began March 5, 1977
- 17 Began January 1, 1977

Name	Nationality	Academic Degree or Profession	Position	Location
Vallejo, Carlos ¹	Ecuador	Ing. Agr.	Agricultural Projects Administration Specialist	San Jose, Costa Rica
Venezian, Eduardo ²	Chile	Ph.D.	Rural Development and Agricultural Business Specialist	Santiago, Chile
Vergara, Nízar	Colombia	Economist	Marketing Professor	Bogota, Colombia
Yeganiantz, Levon	U.S.A.	Ph.D.	Economic Analysis Advisor	Brasilia, D.F., Brazil

1 Began October 18, 1976

2 Began May 1, 1977

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Informe Anual

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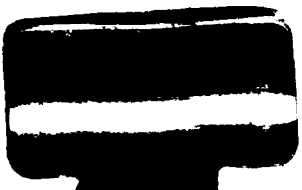
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