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# ANNUAL REPORT 1973



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INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES OF THE OAS



# ANNUAL REPORT 1973





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**INTRODUCTION**



## INTRODUCTION

### Second Report by Lines of Action

It is with pleasure that I hereby submit to the honorable members of the Board of Directors and to the consideration of the Governments of the Member States of the Inter-American Institute of Agricultural Sciences the following Annual Report of Activities, covering the period 1 July 1972 through 30 June 1973.

This is the second Annual Report which IICA presents in accordance with the guide lines set forth in the General Plan, based on activities carried out under the Lines of Action, that is, the structure which determines how the institution is to work on institution building in the agricultural sector of the member countries. There are seven Lines of Action covering areas from institutional analysis and agricultural information to the strengthening of institutions in administration and on the formulation of agricultural policies, reenforcing the national institutions in their efforts in education, research, promotion, regional integration and structural changes.

In the period to be covered by the report, it can be noted that the operative structure of IICA has been visibly strengthened, with the aim of further developing the service capacity of the institution. It can also be seen that the institute's emphasis on country level action is producing encouraging results, which further endorse the Hemispheric and Humanistic Projection which I presented to you in 1970 for your consideration, and which you have wholeheartedly supported.

IICA's humanism is not just an intellectual thesis, but rather a philosophical perspective which attempts to ensure that man be the author of his own destiny. IICA's Hemispheric Projection, with the approval of the member countries, orients the institution's actions entirely towards the benefit of man, considered as an individual and in a corporate manner.

The Humanistic Projection of IICA is an all out effort to induce the national institutions of the agricultural sector to strengthen their programs so as to be able to ensure that the end product of their technical action be persons and not things. In other words, attempts are being made to ensure that the human person, in his intrinsic dignity, be the basic goal and therefore more important than the technical actions themselves which are only a means to establish a humanistic concept for the development of our nations.

In addition to the Humanistic Projection, and complementing its action, IICA has been developing a Hemispheric Projection, which implies the physical as well as intellectual presence of the Institute in each one of the countries of America, through its technical action. We have not yet been able to comply with this important aspect, in its entirety.

With the joining of Canada, Guyana and Jamaica, IICA has increased its member states to twenty-three, although not all of America's nations are part of our institution. Trinidad-Tobago, Barbados, Bahamas and Cuba are still not members of this all-embracing American family devoted to rural development and the improvement of the standard of living of the American 'campesino'.

However, we are proud of our success to date. You may remember that several years ago the number of IICA members was smaller and the number of operative units in the countries could be counted on the fingers of both hands.

The Hemispheric Projection has changed this general situation notably. Country level action has eliminated the sporadic nature of some of the work, which not always reflected true national needs, and has substituted in its stead, a work program which is intimately related to the rural development projects of each country. Thus, the joint action of the national technicians together with IICA's country representatives, become a valid example of what international cooperation should be.

### New Information System

IICA, working through its seven Lines of Action, is producing a considerable amount of informative material which should be made available to others. The diagnosis of the current situation of the agricultural sector of the member countries, its later analysis, and resulting actions at national levels, would induce one to think that a considerable amount of useful and important information could be made available to those who need it. IICA has adopted a new and so far successful informative organization to transmit this information to the member states.

As part of this new tendency, the Annual Report will henceforth dedicate one chapter to the brief analysis of



one line of institutional action a year, at a hemispheric level. The 1972 report began this new system, and chapter one was dedicated to an analysis of the agricultural sector in Latin America, providing a general panorama of the current situation. This year the report will cover agricultural education. A brief descriptive analysis will be provided on the current situation and the institutional actions towards the strengthening of agricultural education at the different levels, throughout the hemisphere.



*The Director General of IICA, Dr. José E. Araujo, Received the 'Partner in 4-H Award' from a North American youth. The award is in recognition of Dr. Araujo's leadership in rural youth programs. Dr. E. Dean Vaughan, President of the Inter-American Rural Youth Advisory Council, looks on.*

### **Close Relationships with Other International Organizations**

#### ***Relationships with the Organization of American States***

The Inter-American Institute of Agricultural Sciences has every intention of strengthening its relation-

ships with the international organisms working in the sector. The relationships with the Organization of American States are closely linked, and cooperative in nature. IICA will be heard by the Special Commission which is studying the restructuring of the Inter-American system, with the aim of ensuring that the specialized organisms will be strengthened and stimulated in their work, which is so important in bringing international cooperation into line with the realities and needs of the member nations.

The report prepared by the Joint OAS-IICA Co-ordination Commission which analyzed the activities related to the agricultural sector being conducted by both organizations, was approved by the Board of Directors on November 17, 1972.

In accordance with a Board of Director's resolution, an agreement with the OAS General Secretariat is being negotiated, to establish the bases for a system of coordination and cooperation of activities of both organizations, which would permit a maximum utilization of IICA as the specialized Inter-American organism for agriculture.

#### ***Relationships with FAO***

In August 1972, I accompanied the Director General of FAO, Dr. Addeke Boerma, on his visit to the Central American countries and Colombia, where the XII FAO Regional Conference for Latin America was being held. I was able to visit all the FAO projects in the area with Dr. Boerma, and participated in the discussions with national authorities.

I feel that there is a growing and valid unity of thought and action between the world technical organism and the inter-American organism. Thanks to people such as Addeke Boerma and Juan Felipe Yriat, a high level of collaboration and coordination is being accomplished between these two entities. The convergence will be confirmed and further accentuated now that Mr. Yriat has been appointed to an important position in the central offices in Rome, and that FAO has designated Armando Samper, previous Director General of IICA and previous Minister of Agriculture for Colombia, as FAO Regional Director for Latin America.

This identity and joint action to which I refer are logical and obviously desirable, as indicated specifically by the representatives of the American governments attending the Sixth Inter-American Conference on Agriculture which was held in Lima, in 1971. This phenomena should be emphasized for two important reasons: the first is the unfortunate fact that all that is logical and desirable does not always occur with great frequency, and the other is the fact that the degree, rhythm, and manner in which the coordination between IICA and FAO is occurring are probably exceptional in the global panorama of multinational development cooperation, and can contribute to the future unity of operational coordination and channeling of technical cooperation in agriculture for the continent.



*Mr. Fernando Batalla, Minister of Agriculture for Costa Rica, and Dr. Emilio Araujo, Director General of IICA, present Mr. Manuel Elgueta, Director of CATIE, with a diploma in recognition for years of service with IICA.*

### ***Relationships with BID (Inter-American Development Bank)***

IICA maintains the best of relations with the Inter-American Development Bank (BID), on the conviction that the specialized organisms of the Inter-American system should actively seek the closest collaboration with the organisms responsible for financing development actions in our countries.

With the aim of providing better services to the member countries, IICA and BID have an agreement which contemplates nine training cycles in nine countries, under the administrative responsibility of IICA.

These training cycles contribute to improving the general situation concerning the lack of trained people to prepare and analyze projects. This lack of adequately prepared people is a limiting factor to the development

of the agricultural sector, since the preparation of alternative investment projects is usually deficient.

BID loans to the agricultural sector for the 1961-1969 period came to 833 million dollars, or about 25 per cent of the total amount loaned out by the Bank. If the agricultural sector were to continue being favored for Bank financing, we must think in terms of about 30 projects a year, with an average investment of 10 million dollars per project. Thus a greater number of better agricultural projects are needed, in addition to the need to increase the investments in specific agricultural fields. To this end, the identification and preparation of new projects in the important areas of research, extension, higher agricultural education, crop diversification, agrarian reform and agricultural credit must be intensified.

The Training Program is representative of cooperative effort between two international organisms, and is indicative of a widening in technical cooperation relationships between IICA and BID.

## ***Relationships with AID***

Relationships with the Agency for International Development (AID) have been oriented through several contracts such as the one for Management and the other signed with ROCAP (Regional Office of the Alliance for Progress for Central America and Panama) to reinforce the faculties of agronomy in Central America. Another refers to the contract between the University of Costa Rica and IICA, which is part of a national development plan for Costa Rica, financed largely by an AID loan.

IICA was selected by the University of Costa Rica from several institutions proposed by AID, to act as consulting agency for the program to strengthen the Faculty of Agronomy. The contract contemplates a total of 23 man-years of technical personnel in advisory services, and a high level IICA technician has been designated as program coordinator.

## ***The creation of a civil association responsible for the activities at the Turrialba Center***

In the second half of 1972, the draft contract for the creation of a civil association to continue the research and educational work of the Turrialba Center was studied in great detail.

The resolution authorizing the Director General to conclude negotiations with the Government of Costa Rica, and sign the contract for the creation of a scientific and educational non-profit association, was approved on January 9, 1973. The new Center will be designated "Tropical Agricultural Center for Research and Education" (CATIE), and will be located in Turrialba, Costa Rica. The contract was signed and ratified by the Costa Rican Legislative Assembly, and became effective as of July 1, 1973.

As a complementary action to the above, IICA transferred the academic responsibility of the graduate courses offered at Turrialba, to the University of Costa Rica, which has a representative on CATIE's Board of Directors. An agreement was signed between IICA and the University of Costa Rica to this respect, on March 27, 1973.

Transferring the responsibility for the educational activities to the University of Costa Rica is due to the new policies adopted by IICA's Board of Directors, to transfer direct academic responsibility to national institutions with adequate human and physical resources, and who are already in a position to offer basic university as well as graduate education.

This does not mean that there will no longer be any direct intervention in graduate education, as these activities will continue at the Turrialba Center, to take full advantage of the research programs underway and

the physical plant and facilities which are necessary for high level graduate education.

IICA's Graduate School has graduated over 500 professionals at the *Magister Scientiae* level, from all the countries of America, and many of them are currently in important positions and are responsible for the agricultural development of our countries.

## **Commemoration of IICA's XXX Anniversary**

The Board of Directors held a commemorative session for the XXX Anniversary of the institution, on October 4, 1972. The President of the Permanent Commission at that time, Ambassador Rafael A. Zúñiga, the President of the Board of Directors, Ambassador Joseph J. Jova, and the Director General of IICA spoke on this occasion.

Ceremonies allusive to the occasion were held in all the countries where IICA has operative units, and at the Executive Offices, a publication was prepared, including all the press releases in Latin America, and the participation of outstanding public dignitaries from the member countries in the Round Table discussions which were held in honor of the occasion.

Recognition was accorded Earl N. Bressman, Ralph H. Allee, Armando Samper and Carlos Madrid, Directors General of IICA in the years prior to 1970, and through them, a special homage was paid to all technicians who have dedicated a part of their professional lives since 1942, to this institution. Those who started the Institute in 1942, those who have participated in its work for the past 30 years, and those who are actively collaborating on our current Plan of Action must all feel great satisfaction to have accomplished something worthwhile, for our countries and our people and in accordance with their mandate, something which is expressed in the positive evolution of the Institute as it is today.

## **The Protocol of Ammendments to the Convention of IICA**

On January 28, 1972, the Board of Directors agreed to circulate a draft Protocol of Ammendments to the Convention to the member governments, for their consideration. The draft had been revised by the Permanent Commission and in accordance with resolution IICA/JD-730-6 rev. 3, the members are prepared to receive the comments and observations which will serve as the basis for the final draft revision and the elaboration of the Protocol for Ammendments, which will then be submitted for final consideration by the Board of Directors.

To take advantage of the Director General's visit to Washington in September 1972, several members of the Board requested a special meeting of the Board of

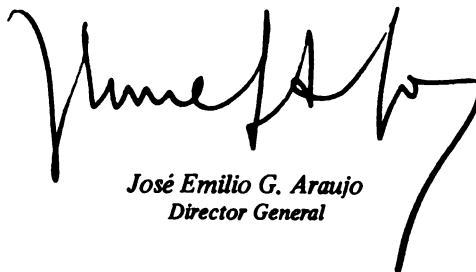
Directors. At this meeting, I was able to explain in detail the scope of the Protocol for Ammendments, making IICA's position in this respect quite clear. At that time, answers had been received from 10 countries. By May of 1973, answers from 13 countries had been received and as 14 are needed, the time was drawing near for the working group of Argentina, Brazil, United States, Costa Rica and Venezuela which had been designated by the Special Commission, to start work on the final version of the Protocol.

### *Institutional Action in the Americas*

In the 30 years of IICA's existence, over 21,000 technicians have been trained in different fields; over 500 have graduated with the M. S. degree in agriculture, forestry, animal husbandry, economics and social sciences. IICA's action has been extended to 23 member countries, and the institution's operational system has been strengthened to include over 800 annual activities distributed over 200 projects and over 60 programs.

This institutional action would not have been possible without the decided and forthright support of the member governments. It would not be possible to acknowledge the special homages rendered the Inter-American Institute of Agricultural Sciences over these 30 active years in the Americas if we were not enthusiastic and decisive in our aim to continue our action where others left off, and in such a way as to make the fourth decade of the life of our institution even more useful to the countries, and thus constitute a very real participation in the Humanistic Development of America.

Thank you.



*José Emilio G. Araujo*  
*Director General*





## Chapter I



THE SITUATION OF THE AGRICULTURAL  
EDUCATION IN LATIN AMERICA

















## Chapter I

### THE SITUATION OF AGRICULTURAL EDUCATION IN LATIN AMERICA

#### Introduction

Higher agricultural education has a history of over a hundred years in Latin America. The founding of the National School for Agriculture in Chapingo, Mexico, in the second half of the last century, initiated an academic movement towards providing our countries with professionals in possession of the basic knowledge thought to be necessary at the beginning of the era, and conversant with the ideas of the time, as required of a professional of this type.

Later, Argentina, Brazil and Peru followed Mexico's example and opened faculties or schools of agronomy in Buenos Aires, Pelotas and Santa Beatriz (later known as the National School of Agriculture at La Molina and today the Agrarian University of Peru) between 1860 and 1910. Other Latin American countries followed suit, establishing schools or faculties, between the second and fifth decade of this century, although some of the faculties of agronomy in the hemisphere date back only a few years into the sixties, as in the case of Honduras (1968).

Graduates from these higher agricultural education centers (with a somewhat general orientation until recently), began to influence agricultural and technical policies in their countries after the second world war, with a few specific exceptions which serve to prove the rule.

The majority of these educational centers, or at least the pioneer group, molded their educational systems on European schools of agronomy, and hired key personnel from countries such as Belgium, France and England, with other Italian, Spanish, Portuguese and Dutch professionals to teach at these schools, on a full time basis. At that time, the concept of full time teaching labors did not include research activities.

The number of years needed to train an 'ingeniero agrónomo' varied greatly and depended on a diverse number of concepts and circumstances. The majority of faculties or schools of agronomy accepted an average of five years of study, although four was found to be sufficient for some, and in others, due to rather special problems, a student needed from 10 to 12 years to graduate. The number of credits or evaluative units varied considerably from country to country, and even between schools within the same country, ranging from a minimum of 190 to a maximum of 360 units as requirement for graduation.

In 1965, there were approximately fifty university-level schools or faculties in Latin America. The number of graduates from those schools came to 1,100 in that year, and the resources available to train them were scarce and of poor quality.

One of the more important problems was the explosion of schools or faculties of agronomy in the Latin American countries in the sixties. From 50 schools in 1965, the number of schools jumped to 150 in 1969/70, as can be seen in Table 1. There are currently over 200.

**Table 1. Latin America: number of schools or faculties of higher education in agronomy, veterinary medicine, forestry engineering and animal husbandry, to 1970\*.**

Countries	Agronomy	Vet. Scien.	For. Eng.	Agron. & An.Hus.	Total
Argentina	16	2	3	4	25
Bolivia	1	0	1	0	2
Brazil	15	9	3	4	31
Colombia	11	4	3	0	18
Costa Rica	1	0	0	0	1
Cuba	1	1	0	0	2
Chile	5	2	2	0	9
Dominican Republic	0	0	0	3	3
Ecuador	1	0	1	4	6
El Salvador	1	0	0	0	1
Guatemala	1	1	0	0	2
Haiti	1	0	0	0	1
Honduras	1	0	0	0	1
Jamaica	1	0	0	0	1
Mexico	8	2	0	3	13
Nicaragua	0	0	0	1	1
Panama	1	0	0	0	1
Paraguay	0	0	0	1	1
Peru	15	6	2	0	23
Puerto Rico	1	0	0	0	1
Trinidad-Tobago	1	0	0	0	1
Uruguay	1	1	1	0	3
Venezuela	4	3	1	0	8
<b>Total</b>	<b>87</b>	<b>31</b>	<b>17</b>	<b>20</b>	<b>155</b>

Source: Inter-American Institute of Agricultural Sciences (IICA)/Latin American Association for Higher Agricultural Education (ALEAS): Study on Higher Agricultural Education 1969/1970.

\* At the present time the total number surpasses 200.

This situation created a large demand for teachers for which the countries were not prepared, and resulted in a tremendous scarcity of appropriate resources, the impos-

sibility of hiring full time professors, deficient physical installations, low quality teaching and little relationship between what was being taught and the countries' needs and national development plans. Some of these schools have such limited physical and human resources, that it is difficult to qualify them as universities no matter what definition is utilized.

Nonetheless, important changes are being implemented and university structure is being modified making it more flexible so that the student can become a more active element in the class, and participate in a more efficient development of the subject matter being imparted.

Fortunately, the situation is disappearing where university education was based mainly on so-called 'magistral' lectures given by highly qualified professionals of great prestige but who had little contact with problems at the faculty where they taught and were completely inaccessible to students.

Rapprochement between professor and students is increasingly noticeable from day to day, with the full time professor becoming more common, permitting modern university education to contain more elements of dialogue and bibliographic and field research, rather than strictly conference-style lectures.

Some of the higher agricultural education institutions in Latin America are in the process of planning their future, including academic programs, improvements in physical plant, quality of professors and administrative procedures. This implies the need for a logical frame of reference on which to base their plans.

The notable increase in numbers of faculties or schools results from the considerable increase in youngsters interested in a profession in areas related to the agricultural sector. In 1960, only two per cent of the Latin American university population studied agricultural or related sciences; currently the percentage has almost doubled, being close to five per cent at the present time.

This emphasizes the need for a different orientation as to the solution of problems presented by the current situation. It is important to have the information available to carry out a comparative analysis as a starting point for the planning of academic and administrative policies of the higher agricultural education institutions and their relationships with other levels of agricultural education, especially with the agricultural technical school and the graduate schools, the latter being the most advanced stage in the training of professionals.



*Agricultural education begins in the field . . .*



...to continue in the technical school or university classroom,...



...at meetings and in seminars,...



*...and at the graduate level...*



*... where the latest information and methods can be put to good use.*



## Current Situation and Problems

Before continuing with the progress analysis in higher agricultural education in Latin America, it is important to point out that although there have been important improvements in relation to teaching quality, physical and human resources, physical plant, educational systems and curricular and methodology orientations in the majority of schools or faculties, it is also necessary to indicate the more frequent problems to be found in Latin America in education.

It would be too lengthy and monotonous to describe the situation of agricultural education in each Latin American country, in addition to risking the possibility of being unfair with respect to the choice of specific problems. For these reasons therefore, it was felt more appropriate to present a general description of the current tendencies in education.

A basic assumption is that education is an instrument of change. It is essential therefore, that a first step is for education itself to change, since the 'elite' orientation of past education which has carried over to some extent into the present cannot be maintained.

Education in general is thought of as an instrument of domination, and not only on the American continent. Data from the International Conference on Education held in Geneva in 1971, indicated that if a likely number of children from liberal and higher income level homes to enter university were to be 1,000, the probability of a worker's son entering university in the United States would be 0.202; in Italy it would be 0.037; Japan 0.032 and Austria 0.020. It would be interesting, to see how this numerical comparison would turn out in Latin America, taking into account for statistical calculations, that the working and 'campesino' family of this continent is twice as large as the family from the middle and upper stratas.

The educational pyramid of the American continent, which has an ample base for primary education, recedes noticeably at the higher levels of education, due partly to a high degree of selectivity found in the higher agricultural educational levels. Selective stratification polarizes the social groups qualitatively as well as quantitatively, leaving the illiterate and lowborn behind at the base of the structure, with ascendancy within the structure utilized as a means to increase income and maintain power in the hands of a few privileged persons.

At the same time, education can be considered overly conservative in many aspects, since the basic concern is to transmit knowledge of the past, almost without taking into account the needs and conditions for tomorrow. The educational system in several countries only recognizes internal levels of decisions made within the same system. The community which supports the system and the student, hypothetically the beneficiaries,

can only bring influence to bear in a limited and indirect manner on the planning, carrying out, methodology and course contents of the educational system.

Educators and sociologists agree that agricultural education, at all levels, is an instrument for development, and visible progress has been achieved in the faculties and schools of agronomy of this continent during the sixties. Study plans have become more flexible; diversification within the study plans has been established; the number of full time professors has been increased; the curriculum of the basic sciences has been revised; and some of the areas of the university career have been revised and restructured. Numerous graduate schools have been established with the aim of producing specialists with an intimate knowledge of the realities in Latin America. Guidance and orientation at diverse levels are now being offered in specific areas.

Despite the positive advances and the evident evolution in the criteria for innovative action, the faculties and schools of agronomy, with some exceptions, are still weak in certain areas, which must be strengthened to be able to efficiently attain the objectives they are committed to. These areas are:

*Lack of integration within a faculty:* each course or subject matter can become a small feudal reserve with no connection to similar or related courses. Integrated disciplines do not exist, or only in exceptional cases, and maximum utilization of human and physical resources is not being achieved.

*Lack of integration within a university:* few faculties of agronomy work in an integrated manner with the other faculties of a university. Their isolation from the majority of other faculties, at the basic as well as the specialization levels, under-utilizes available university resources.

*Lack of integration at the national level:* many of the universities are not involved in the national development plans. Little integration exists between the agricultural research and extension plans and the faculties of agronomy. Study plans are frequently not up to date with the reality and needs of the country. Macroeconomic diagnostic studies are not taken into account to determine the type of professional needed and the functions he should perform within the national development plans. In some cases, clearly defined objectives do not even exist.

*Inefficient academic and administrative organization:* the majority of faculties and schools of agronomy have not as yet institutionalized a system of self-evaluative studies to promote improvement. This produces unfavorable results with respect to the organization of short and medium range activities. Some of the academic units such as laboratories, libraries and experimental stations are in urgent need of attention in this respect.

*Insufficient number of full time professors:* the majority of the faculties of agronomy have doubled their student populations in the past five years, and

face the serious problem of not enough full time professors. In some cases, the scarcity became evident when the study plans were diversified.

*Traditional teaching-learning systems:* few university professors have had any orientation on teaching techniques and therefore tend to utilize traditional methods which implies the limited participation or none at all of the student, in the teaching-learning process. Independent learning, group techniques, programmed instruction and audio-visual aids are little used resources in university teaching.

*Incomplete student services:* many universities have education orientation units, however their services are frequently deficient or insufficient, resulting in a high percentage of student drop-outs.

*Lack of future projection:* many agricultural education organisms lack plans of medium and long range projection. They do not know what they will be doing within ten years: should they start graduate studies; what is the future financial projection; what

are the plans for future physical expansion, and so on.

At the secondary and technical levels the same problems as outlined above can be observed, including an additional one: the unhappy reality of deficient dormitory installations in agricultural technical schools.

At the graduate level, these problems tend to diminish as a result of more careful planning, a high degree of preparation for the component parts, more available resources and their very newness.

Public expenditures on education in the world increased by nearly 50 per cent from 1960 to 1968. In Latin America, expenditures went from 1,880 million dollars to 4,430 million dollars. However, despite these impressive figures (which are less impressive if population increases are taken into account), education in Latin America, and especially agricultural education, remains pretty much as described above perhaps because it has not been given the independence it should have to initiate change, liberation and the development process.

TABLE 2. Number of Students, by country, who received training in Turrialba, from 1 July 1972 through 30 June 1973.

Country	Forest Sciences	Crops & Soils	Animal Husbandry	Library *	Statistics**	Total
Argentina	—	—	1	1	—	2
Bolivia	—	5	—	1	—	6
Brazil	5	6	2	3	—	16
Colombia	1	8	5	3	—	17
Costa Rica	2	2***	6	—	3	13
Chile	—	1	1	—	—	2
Dominican Republic	2	4	3	—	—	10
Ecuador	2	2	5	—	—	9
El Salvador	—	1	2	2	1	6
Guatemala	1	—	3	2	—	6
Haiti	1	—	4	2	—	7
Honduras	—	—	—	2	—	2
Mexico	1	1	13	2	—	17
Nicaragua	—	1	4	2	—	7
Panamá	—	1	2	—	1	4
Paraguay	—	—	1	—	—	1
Peru	3	4	12	5	—	24
United States	2	1	—	—	—	3
Uruguay	—	—	—	1	—	1
Venezuela	—	6***	4	3	—	13
OTHER	—	1	—	—	—	1
<b>TOTALS</b>	<b>20</b>	<b>44</b>	<b>68</b>	<b>30</b>	<b>5</b>	<b>167</b>

\* Inter-American Centre for Agricultural Documentation and Information

\*\* Statistics and Computation Unit, Executive Offices, IICA

\*\*\* One student also received training in Animal Husbandry.

**Table 3. Number of professionals who have obtained the *Magister Scientiae* degree; distribution by country and area of specialization (July 25, 1947 through June 30, 1973).**

Country	Extension*	Economics*	Devel. Resources*	Crops & Soils	Forest Sciences	Animal Husbandry	Total
Argentina	11	—	—	2	1	9	23
Bolivia	3	1	1	12	7	7	31
Brazil	8	10	9	19	11	7	64
Colombia	7	3	4	22	14	5	55
Costa Rica	3	1	4	10	6	2	26
Cuba	—	—	—	—	1	—	1
Chile	2	—	1	10	4	7	24
Dominican Rep.	—	3	1	3	1	2	10
Ecuador	10	1	2	34	10	6	63
El Salvador	—	1	—	2	—	2	5
Guatemala	—	2	1	7	—	1	11
Haiti	5	1	—	4	1	7	18
Honduras	—	1	2	1	1	2	7
Mexico	1	—	2	11	6	27	47
Nicaragua	—	2	2	5	1	1	11
Panama	2	1	2	4	1	3	13
Paraguay	1	2	—	2	—	1	6
Peru	2	1	—	33	8	13	57
U.S.A.	3	—	—	6	3	1	13
Uruguay	6	2	1	8	3	3	23
Other countries	—	—	1	7	—	1	9
<b>Totals</b>	<b>64</b>	<b>32**</b>	<b>33</b>	<b>202</b>	<b>79</b>	<b>112***</b>	<b>522</b>

\* These three areas of specialization became integrated into one: Rural Development

\*\* Includes 4 students graduated at IICA-CIRA, Bogota, Colombia

\*\*\* Includes 24 students graduated at La Estanzuela, Colonia, Uruguay.

## IICA Action

IICA has contributed in an important manner to the evolution of agricultural education in this hemisphere. In 1946, IICA opened the way to graduate education in Latin America. This pioneer action has been followed by the founding of around 22 graduate schools in Latin America in the last decade, indicating the acceptance and support without reserve of this action by the Member States.

More recently, IICA has participated in the development of graduate studies in Argentina, Brazil, Chile and Colombia and has been linked with efforts along this line in Mexico, Peru and Venezuela. Historical perspective therefore, will find IICA linked to nearly all the national and institutional efforts in this area, in Latin America.

IICA has had almost 30,000 participants in its graduate, basic university and intensive short courses. One hundred and sixty seven Latin American profes-

sionals received graduate training at the Training and Research Center in Turrialba, during the period covered by this report, before the Center became an autonomous institution denominated the Tropical Agricultural Center for Research and Training (CATIE), with the academic responsibility of the graduate school passing into the hands of the University of Costa Rica (Tables 2 and 3).

In actual fact, IICA's educational programs were responsible for 25 per cent of the operative program of the Institute. With the creation of new Lines of Action, this percentage diminished. However, this is not necessarily indicative of a diminution in our efforts, but rather of a greater specialization of our actions in line with the general guidelines of the institution on technical cooperation, which insist that IICA's efforts be directed towards promoting national activities and not substituting them.

For the 1972/73 fiscal year, the institute's operative program indicates that 50 per cent of the programmed activities are linked to education as an instrument. Educational action appears in 63 per cent of the projects

and 78 per cent of the programs. These figures emphasize the importance IICA places on education.

The fact that education is a continuous and interacting process must not be lost sight of, and therefore, for methodological reasons, cannot be divided into isolated compartments. The emphasis placed on graduate level education by the institution, must be basically the same as the principles for grammar school education, and therefore any decision taken with respect to the institutional building of the subsystem, must be based on the same fundamental assumptions.

In the first place, all indications would be that education must contain a highly developed sense of humanism oriented towards promoting the full realization of a human person's capacities, considered within the social context of the productive system.

Within the hemispheric projection of the institution, education should be interpreted within the framework of IICA's action in the sphere of each Member State, rather than as a concentrated action in a few individual centers.

With respect to the external action of the Institute, five different levels of action can be differentiated: graduate studies; university level agricultural faculties and schools; high school, intermediary and rural technology education; rural primary schooling and extra-curricular education which includes rural extension.

### *IICA Action in the Andean Zone*

In the field of education, IICA worked on three multinational programs in the Andean Zone (strengthening of graduate education; strengthening agricultural university education and agricultural extension) with five multinational projects and 26 activities. The strictly national level actions must be added to this listing.

In the national programs, it was considered necessary to emphasize promoting and establishing graduate programs with the aim of making the most of multinational cooperation and complementary action. These programs would be accessible to qualified technicians from small and weak institutions; would ensure that the professional is not isolated from the reality of his environment; would permit students to carry out their research activities in their own countries, and would offer students the possibility of taking minors.

In agricultural extension, work has been on the search for a methodology which integrates the diverse experience acquired in Latin America and at the same time permits the human development of the rural populations, incorporating them efficaciously into the rural development scene and at the same time, permits a technical development appropriate to the ecological conditions and available resources, taking full advantage of existing indigenous cultural wealth.

In Peru, the educational reform, promulgated by the General Law on Education (Law Decree 19326), is in the process of being established at the university level.

From an innovative point of view in education, the Andean Zone is in the last stage of the first Graduate Course by Stages, in Animal Production. This system has provided professionals with the opportunity to take graduate studies who otherwise would have found it difficult to up-grade their educational level. Throughout the course, students have kept on the job, except for brief periods of time, being able to return to their job sites between one stage and another. It is expected that the system will continue under the academic responsibility of the National Agrarian University of Peru, with support from IICA's Regional Office for the Andean Zone.

In Bolivia, closed universities were reopened after the Basic Law for Bolivian Education was passed. The law contemplates the creation of the National Council for Higher Education (CNES), a central organism in charge of directing, integrating, planning, coordinating and supervising the academic and administrative mechanisms of higher education in Bolivia. With the universities reopened, contact has been reestablished with the departments of Agronomy, Animal Husbandry, Veterinary and Forest Sciences.

IICA was active in the promotion of the Second Meeting of the Bolivian Association of Higher Agricultural Education Institutions (ABIEAS). Upon specific recommendation of the Board of Directors, IICA was instrumental in the structuring of an agricultural extension and rural development project in the department of Oruro.

In total, five projects in agricultural education were undertaken in Bolivia.

In Colombia, IICA action was forwarded mainly through the multiple courses, meetings and seminars sponsored by IICA-CIRA and the National Agricultural Training Program.

Due to the increasing interest of the Colombian government in educational activities, IICA felt it advisable to reinforce the interdisciplinary team in the country through the addition of a high level educator.

Representatives from many of the institutions within the Colombian agricultural sector were present at and participated in the regional seminar for professors of animal husbandry, in the specific area of animal production; at the first forestry seminar to be held in the Andean Zone; and at the regional seminar on the administration of higher agricultural education institutions. In addition, professors from the faculties of agronomy in Colombia participated in the elaboration of a report on the current situation of forestry education in the Andean Zone. A regional seminar on agricultural extension was also held.

In Ecuador, advisory services were provided the Ecuadorian Association of Higher Agricultural Education Institutions and the Annual Meeting of the AIEAS; the faculties of animal production; the first national seminar for animal husbandry professors; courses in teaching methodology as well as the extension program of the Ministry of Agriculture. An evaluation of the Extension Service was also completed.

In Venezuela, through four national and three multi-national projects, support action has been provided graduate education and higher agricultural education in general. At the same time, the improvement of the agricultural extension organisms was promoted.

Based on efforts of the Venezuelan Association of Higher Agricultural Education Institutions in collaboration with the faculties and schools of agronomy, veterinary medicine and animal husbandry, self-evaluation studies have been promoted, with the purpose of improving these institutions. The completed self-evaluation study of the Faculty of Agronomy of the Central University of Venezuela has already been published.

Courses were given in training and higher agricultural education methodologies, and technical cooperation services to the animal husbandry and veterinary sciences school have been continued. Priority areas have been assigned for technical cooperation action in the educational field: the participation of Venezuelan professors in the Regional Seminar for University Professors of Animal Nutrition was promoted, as well as their participation in the graduate program being offered at the National Agrarian University of La Molina, in Peru.

As concerns the Graduate Program in Agricultural Sciences, action has been taken to clearly define teaching policies for graduate studies; to compile information on the current situation and analyze the possible consequences. With the help of AVIEAS, a study is being made of the resources and needs of the country with respect to graduate education in agricultural sciences.

In general, IICA action in the Andean Zone has continued strengthening higher agricultural education institutions through teaching methodology courses, regional and national seminars, study fellowships, support to teacher associations, and assistance on the implementation of graduate studies, reinforcing specific priority areas.

### *IICA Action in the Northern Zone*

To help solve the problems outlined in the first part of this chapter, the Regional Office for the Northern Zone and the country representatives of IICA in the area, have been concentrating their efforts on the following:

**Up-grading teaching capacity.** The Northern Zone of IICA has followed a consistent policy of providing

professors with facilities to carry out advanced studies, especially in areas lacking qualified teachers. At the same time, intensive short courses to up-date knowledge are given and in-service training provided. Seminars have been sponsored for professors, by disciplines, with the purpose of standardizing course contents in a given subject area.

Events are also being sponsored between faculty functionaries on aspects concerning academic and administrative organization, to provide means to improve the administration of agricultural education organisms.

Seminars for professors are also being promoted with the purpose of providing ideas on how to conduct a self-diagnostic study for the evaluation of an institution, so that they can detect their own weak and strong areas. At the same time, the institutionalization of improved evaluation systems is being promoted, with the aim of evaluating student progress and professorial capacity.

Short teaching methodology courses in agricultural education have been offered in the majority of faculties of agronomy in Mexico and Central America, with the express purpose of improving the teaching capacity of the professors. Similar courses have also been given at the majority of secondary agricultural schools in Central America. In Mexico, and with the approval of the Public Education Secretariat, the plans are to train a team of national professors to give these courses to the teachers at the agricultural technological schools of the country. At the university level, efforts are being made to ensure that the universities and schools of higher agricultural education in Mexico organize their own teaching support units to help orient local teachers. An aspect particularly worthy of mention is the program to train local professors in the setting of objectives and planning of short and medium range activities.

**Advisory services provided regional integration organisms.** Perhaps the most significant case within the Northern Zone actions along this line has been the work in collaboration with the Permanent Commission of Higher Agricultural Education (CPEAS) which is an organism which depends on the Central American University Confederation (CSUCA), and is integrated by the deans of the faculties of agronomy throughout Central America.

In Mexico, IICA was instrumental in the creation of the Mexican Association for Higher Agricultural Education (AMEAS), integrated by sixteen schools of higher agricultural and animal husbandry education, and five graduate colleges.

At the secondary level in Central America, the creation of the Central American Association of Secondary Agricultural Education (ACEAS) was promoted, with nine secondary agricultural schools throughout the Isthmus as members, for a start.

These regional groups or nuclei study and seek solutions for common problems; IICA has been assisting these efforts.

**Limitations to IICA's Action in the Northern Zone.** With respect to graduate studies fellowships, the Northern Zone has very limited funds to finance this type of action. However, external financing has been sought with some success, obtaining significant support from ROCAP and the University of Puerto Rico. In addition, the Netherlands government and some of the local institutions have provided scholarships for professors to study in Turrialba. Nonetheless, greater efforts will have to be made to find the funds needed so as to be able to improve the technical and teaching capacity of the professors working in agricultural education organisms.

The teacher population is somewhat mobile due to the few incentives offered career professors. As mentioned previously, few agricultural education organisms have plans for improving or strengthening their teaching capacity, and not one has an expansion plan.

IICA must work with university authorities to make them consciously aware of the urgent need to improve libraries, laboratories and experimental stations as basic units for the training of professionals in agriculture. Efforts must also be made to stimulate inter-change teaching techniques to promote student participation in his own training. All this with the principal purpose of training the type of professional needed to fill the country's requirements.

### *IICA Action in the Southern Zone*

IICA action as it is today in the field of education, began in 1963 when a committee was designated to project a study program for the specialized training of technicians on an ample basis, taking full advantage of the Institute's experience with its Graduate School in Turrialba. In this manner, the Graduate Education Cooperative Program of the Southern Zone was born, and was approved by the Board of Directors at the second annual meeting held in Lima, in May 1963.

The first thoughts on the establishment of such a program began in the fifties, resulting from definite needs and aspirations. The program's objectives had already been defined, and its aim was not an encompassing analysis of education as a development instrument, or to determine the problems and failures with the purpose of finding the means of resolving them, but rather to add another floor, a new level in the higher agricultural education structure, by providing graduate education.

For many years IICA had utilized education as a 'means' - developing courses, training people, and helping others to do both. The Graduate Education Cooperative Program was the first in the Southern Zone and in IICA, to visualize education as the 'goal'.

Training specialists requires high quality academic and research standards or levels. As few institutions were able to provide them, a complex mechanism of programming and organizing graduate courses was created to ensure the necessary academic level. It was essential to promote inter-institutional relationships, particularly between education and research institutions. The first courses were heavily financed by IICA through scholarships and the financing of visiting professors, and other expenses.

Within each country, the program worked through specific institutions, delegating local collaborators with organizational duties, centering interest in planning and coordination around their work (Regional Advisory Committees and Educational Council).

From the initiation of these graduate courses, it was evident that prior university training of the students was most varied as to level. To avoid making the graduate program a system of correcting identified deficiencies only, it was essential to undertake specific strengthening action at the university level. Thus, with the addition of a new education specialist, the Southern Zone initiated a Regional Cooperative Program for the Development of Agricultural University Education in 1967/68.

This Program was oriented towards institutional development and strengthening to include all the organisms involved in the field, rather than specific work with one or two isolated institutions. The Program worked almost exclusively with the organizations which offered university training in the field of agricultural sciences.

As opposed to the Graduate Program which was meant to promote the creation and institutionalization of something new, the University Education Program found 70 institutions that met the requirements of its principal objectives. The new program was to work with all existing institutions in the Southern Zone which offered agricultural training at a university level, collaborating with them to promote their development and their integral reinforcement.

To initiate the program, the First Meeting of Rectors, Deans, and Directors of Higher Agricultural Education Institutions in the Southern Zone was held with about 60 participants representing 40 institutions from the five countries in the Zone. The success of the meeting was reflected in the number and quality of the recommendations formulated, which contained the essence of practically every idea later developed by the Program.

As a result of one of the meeting's recommendations, the Advisory Committee on Education was created, with representatives from all the institutions in the Southern Zone. This Committee was the first step in developing a liaison and communications mechanism with all the higher agricultural education institutions. Hopes and aspirations which decisively influence the program's progress and evolution are channeled through this Committee.

During the five years of the Regional Cooperative Program for the Development of Agricultural University Education, intensive work on the study and analysis of the current situation in education produced over 40 publications.

To complement at a national level the efficient work carried out in the multinational plan by the Advisory Committee on Education on the orientation and planning of the program, the idea was promulgated to organize or consolidate national associations or committees to bring together the institutions involved in the program. The Permanent Committee of Deans already existed in Chile, and ABEAS in Brazil was being revitalized. No national level association existed in Argentina to bring together the higher agricultural education institutions. With help from IICA, the AUDEAS was created in November 1970. There is only one university in each of the other two countries of the Southern Zone—Uruguay and Paraguay—eliminating the need for any such association.

The national associations have three basic functions as concern IICA activities in the field of agricultural university education in the Southern Zone. These are: to serve as the planning elements of national activities; to serve as the instruments to carry out these plans; and to bring together and represent all the organizations in the respective countries, before the Advisory Committee on Education.

The autonomy enjoyed to a greater or lesser degree by the majority of universities of Latin America lends importance to the function of these national associations which serve as the perfect instrument to establish a coordinating mechanism of a voluntary and democratic nature, to develop the central planning functions for higher agricultural education.

IICA has provided support action from the initiation of the program to the existing national associations in Chile, Brazil and to AUDEAS in Argentina which was founded in 1970.

The Cooperative Program for Graduate Education was recently reorganized for the Southern Zone. The Regional Advisory Commissions were eliminated and the Educational Council was supplanted by an Advisory Commission on Graduate Education, which has liaison and programming functions at a multinational level. In Argentina and Chile, the work is directly on a national level. In Argentina there are two institutions which offer graduate education and in Chile there is one Program. In Brazil, where there are several institutions involved, a 'Coordenaduria de Posgraduacao' has been created, which functions within ABEAS and has two representatives on the Advisory Commission for Graduate Education, as do Argentina and Chile.

The Advisory Committee on Education recommended an intensive and somewhat ambitious program of activities related to a diagnostic study of the university agricultural education system in the Southern Zone. The Committee itself agreed that this study

should be done in parts, so that in each case, an international meeting of the pertinent specialists could be held to complete the needed information, evaluate the study and formulate the corresponding conclusions and recommendations.

The studies to be conducted and international meetings to be held cover the following aspects: forestry education; education in chemistry; education in mathematics, physics and statistics; education in botany, plant physiology and plant ecology; animal husbandry education; education in plantbreeding and genetics; education in agricultural meteorology and climatology, and education in the veterinary sciences. At the present time, a study is being conducted on education in economics and social sciences and the corresponding meeting will be held in 1974. A seminar was held in 1970 in Rio de Janeiro, on Higher Agricultural Education Planning, which provided additional information on the current situation in this area in Argentina, Brazil, Chile and Uruguay.

In an evaluation on the immediate effect of these meetings, 95 per cent of the responses indicated a permanent effect, while 71 per cent indicated some positive effect for continuation. In some cases, the result was to hold similar meetings at a national level, promoted and organized by the participants at the international meetings.

The institutions in the Southern Zone have indicated their uneasiness in the areas of planning and teaching methodology. IICA therefore organized a Seminar on Curriculum Planning which was held at the National University of La Plata in Argentina, with the participation of authorities and professors from all the institutions in the Southern Zone. Teacher training courses were also given in the five countries of the Zone.

Work on improving the teaching levels in higher education has found a valuable instrument in the teaching support units. IICA has therefore collaborated on the financing and organization of these teaching support units at the School of Veterinary Sciences of the Federal University of Minas Gerais and the Faculties of Agronomy and Veterinary Sciences at the National University of La Plata, in Argentina.

In 1969, IICA organized a Seminar on Wildlife Management and Conservation at Puerto Iguazu, Argentina. This seminar aroused the interest of the participants in a course to train professors in this area. The course was given at the Graduate School in Turrialba, with a preliminary course given at the Forest Engineering Faculty of the Central University of Chile. IICA's action in this field has opened up another area in the higher agricultural education of the Southern Zone, providing a group of professors specialized in Wildlife Management and Conservation.

The Advisory Commission for Graduate Education and the Advisory Committee on Education met together for the first time in May, 1973, in Santiago, Chile. At this meeting, IICA was requested to prepare methodologies and procedures with the aim of determining the



areas in the agricultural and forestry sectors which merit attention in each country. This is an important step for the reformulation of the educational programs in the sector, and one that the institutions in the Southern Zone are eager to take so as to meet regional development requirements. To comply with this request, IICA has assigned two Argentinian technicians to develop an alternative methodology to encompass the occupation possibilities in the agricultural sector of Argentina, with the aim of adapting the methodology to the different countries within the Zone.

### *IICA Action in the Antilles*

Work in the Antilles was based on three main projects and six activities related to the building up of the higher agricultural education organisms of the Dominican Republic and Haiti, and the strengthening of the middle level agricultural education organizations in the Dominican Republic.

This work was implemented through graduate level scholarships; advisory services to the faculties and schools of agronomy; preparing a seminar on higher agricultural education; in-service training for university

professors, and negotiating an agreement with the Faculty of Agronomy and Veterinary Medicine in Haiti.

Progress has also been achieved in the coordination of a Canada/Haiti/IICA project to build up the faculty of agronomy in Haiti. Haitian librarians have also been sent to IICA-CIDIA for training, and progress has been made in the diagnostic study on secondary and extra-curricular agricultural education.

In general terms, it is fitting to mention IICA's educational action at the Center in Turrialba and at CIRA in Colombia. The countless activities carried out at these educational centers are described in the corresponding appendices.

Perhaps it is opportune to conclude this chapter on education with a quote from Renée Hubert: "Educational philosophy is in the first place, the philosophy of man. Only as such can it accomplish its mission with conscience, granting it autonomy to govern itself and as a result, to also govern physical and social aspects". IICA is in complete accord with the sentiment expressed in this statement.

## Chapter II



IICA IN AMERICA

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# HEMISPHERIC PROJECTION OF IICA



● MEMBER COUNTRIES

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## CHAPTER II

### IICA IN THE AMERICAS



*Ing. Pedro Hidalgo, Minister of Agriculture for Chile, speaking at the inaugural session of the Twelfth Annual Meeting of the IICA Board of Directors.*

#### **A definition of international technical cooperation**

Relating the situation of the Latin American agricultural sector with IICA's action, it can be stated that within the process of redefinition of institutional doctrine, the term technical assistance does not correspond to the Institute action.

IICA is an association of countries which help each other, in a spirit of reciprocal cooperation, and reject the

term technical assistance, which denotes a unilateral means of fomenting action, and therefore is not compatible with the organization.

It is felt that the term 'technical cooperation' expresses precisely the multilateral sentiment, and is most adequate to describe the situation of the institute, and the present era. In addition, it is essential to promote this new concept in the member countries of greater relative development, with the aim of providing a greater flow of cooperation towards those countries of lower levels of development.

It is felt, therefore, that technical cooperation opens up areas which must be defined. Technical cooperation, thus, includes the combination of activities, with the exception of the importation of capital goods, that a non-profit supernational organization conducts within a country by mandate of the national institutions and in collaboration with them, with the sole aim of achieving development.

Within the agricultural sector, the activities of the multinational consortium dedicated to marketing technical inputs and agricultural production are excluded automatically, since the principal objective of these consortia are apparently diametrically opposed to development enterprises. Along this same line of thought, new, more adequate instruments have been found for international technical cooperation in the agricultural sector. Basically, these are as follows:

- Education, understood as an integral process of liberation, which trains people in administrative techniques as well as in general, to participate in the development processes with a critical awareness for obstacles, limitations and possibilities inherent in these processes.
- Research as an essential ingredient for national development plans, with the main objective of providing new information and testing for the adaptability of technologies developed in other countries or regions.
- Direct advisory services which try to utilize existing knowledge to face some of the problems, and which can be based either on the previous experience of the technician, the team, or even the country, or which can be based on research results.
- Support the establishment and function of groups and permanent commissions, whose main purpose is to coordinate the programming, carrying out and evaluation of specific institutional actions.
- The organization of international forums with the aim of discussing and compiling experiences in specific fields.

### **Strengthening national institutional systems**

Progress has been achieved with respect to the ideas concerning institution building, within the process of defining IICA's doctrine.

For IICA's purposes, it has been decided that an 'organism' which is a social unit with a structure of strategic and systematically coordinated positions oriented towards specific objectives and tasks, should not be a main objective for IICA action.

It is also felt that the 'institution', which should be interpreted as a series of normative values and shared

services by a social group, with the aim of resolving a specific need, should not be considered a main objective for IICA action.

In a third stage of this analysis, it was felt that the 'institutional sub-system', or group of organizations and institutions with common principles and norms to serve as a basis for planning and carrying out specific objectives, was also insufficient as a sphere of action for IICA.

The 'institutional system', that is, the combination of organisms, institutions and sub-systems, as well as the guiding principles and norms of the agricultural sector, tied in together and inter-coordinated into an indivisible whole despite the relative functional independence of the component elements, may be considered as a main objective for IICA action.

In this manner, an attempt is made to satisfy a general, common objective, which apparently can only be implemented through the institutional system, concentrating action on the strategies, organization and instruments of the institutional system.

It becomes clear, therefore, that for IICA, strengthening the institutional system implies helping train the organisms, institutions, sub-systems and the institutional system in general, to produce better current services, influence and institutional reinvestments. Current services include research, education, technological information and the acquisition of products, land distribution and the organization of the 'campesinos', amongst others. The deliberate efforts made to change environmental conditions is defined as 'influence', so that the services can be approved and accepted by a high percentage of society. Institutional reinvestments include personnel training, internal reorganization processes, and the formulation of doctrines within the system, so as to increase its capacity to serve and to influence.

### **Emphasizing country level action**

As a final step in the process of redefining IICA's doctrine, efforts have been made to link the Hemispheric Projection which was launched in 1970, with the decision to take the individual country as the basic nucleus for action.

This decision, permits a first hand identification in each country of the basic political-geographical development unit, and the close relationship between decision making and carrying out orders. In the second place, it allows IICA to adjust its action to the variable realities of each country, and finally, it provides IICA with the opportunity to apply more direct strategies in strengthening the institutional system, taking into account the differences found in each country.

At the same time, it would seem that the general objective of IICA to "help the countries to stimulate and



promote rural development as a means of achieving a general development and wellbeing of the population” provides a natural sphere of action for the country representatives. It is felt that country level action is important for the moulding of other ideas to be integrated into the institute’s doctrine, as well as being essential in relation to the instruments to be utilized by IICA to implement its action.

It is only through the permanent presence of IICA in the countries, that a thorough knowledge of the institutional system can be obtained: the identification of the leader, coordinating and planning organizations; the verification of existing currents and the study of

development tendencies; objectives to overcome and accelerate these tendencies and the sectorial organization needed to carry them out; the institutions which are lacking in the institutional system, and the key organization for implementing the agrarian policy objectives. The eventual identification of the inefficient organisms is only possible when the reciprocal relationships between IICA’s representatives and the countries themselves mature.

Reconciling the interests of a country with the institutional objectives of IICA become feasible, as an affinity and identification of national and IICA’s efforts are achieved.



*The chairman’s table at one of the sessions at the Twelfth Annual Meeting of the IICA Board of Directors, held in Santiago, Chile, in May 1973.*

### National Committees

The above would be of little effect, if IICA did not take the necessary steps, together with the member countries, to implement its country level action in close coordination with the functionaries of each country.

The necessary actions are therefore being developed to ensure that the physical presence of IICA in the countries be significant. In many countries national programming committees have already been officially established, and are expected to begin functioning shortly in the remaining countries.

The national programming committees have been incorporated into the official policy programming of IICA, and in this manner have established the first link in the chain of decision-making which ends with the approval of the Proposed Program-Budget by the Board of Directors.

It is IICA's intention that its country representatives become familiar with the internal needs of each country, and therefore it is felt that the most effective way to achieve this is for the Agricultural Planning Sectorial Offices to inform the Institute directly of the technical cooperation needs, and other aspects in which IICA could collaborate.

As a result of this system, IICA is assuming a singularly important role. Supporting the efforts of national institutions is more than a casual adventure from outside; it is a truly felt need and a challenge to the creative imagination of the Institute. There is no longer any need to speculate in a theoretical manner on unknown situations, but rather to link together a chain of coherent actions which reflect the will of the countries.

### **Internal reorganization**

Needless to say, an internal organization which permits action without interference and which counts on the best possible structure, is essential to be able to launch the technical-institutional apparatus in collaboration with the institutional systems of the agrarian sectors of the individual countries.

The Hemispheric and Humanistic Projection of IICA has achieved a physical expansion of IICA's action in the three years since its inception, and has undertaken an exhaustive study to redefine its institutional doctrine, as described above. Having accomplished this, it became essential to recondition the internal organization so as to better achieve the newly defined objectives. It became essential therefore, to reorganize the administrative structures of the Institute.

Based on the theory that true decentralization is only possible when operative autonomy exists along with centralized technical and doctrinal direction, the Institute redesigned its organization on a pyramid-type graph basis. The country representatives are at the base of the pyramid, as they are the basic operative units of IICA's action, as per the General Plan.

To ensure their full commitment, the country representatives are responsible for five main functions. They are responsible for presenting the national needs to serve as a basis for the elaboration of programs and projects, that is, they diagnose the institutional development processes of the agrarian sector. The representatives must translate national and multinational programs into specific lines of action for the corresponding country, therefore they must program its action. The representatives are also responsible for implementing

IICA's action in the country, and in addition must propose needed adjustments or new actions as deemed necessary. They must evaluate and reprogram their actions. And finally, they must ensure the successful official relationships between the Institute and the member countries, as well as with other international organizations working in the country. The country representatives, therefore, have been assigned the basic functions corresponding to management or administrative processes.

To relate these functions with the corresponding normative guidelines, the organization of the Executive Offices has been divided into three main areas: Planning, Operations and External Coordination.

Under Planning, IICA's doctrine is translated into medium and long range strategies to implement the basic instrumentation of the Humanistic Projection, the philosophy of the country representative and the constant search for ways to strengthen the institutional system.

Under Operations, a support apparatus has been instituted in relation to the carrying out of the operative unit programs, and at the same time, a control system related to the carrying out of these activities has been established.

And last, though by no means least, efforts have been made to improve official relations under External Coordination, with member countries and other international organizations, through the adoption of coordination and public information mechanisms which stimulate close relationships and increase the dispersion of information about IICA's action. Improvements have also been made in handling inter-institutional transactions.

The Regional Offices in Guatemala, Peru and Uruguay have been maintained as direct links between the normative and strictly operation levels -intermediaries between the Executive Offices and the country representatives. The Regional Offices serve as area coordinators for the country representatives.

It is important to reemphasize once again, the significance of the restructuring of IICA's functions, maintaining perspective and in proportion to our resources. As a result, the Executive Offices in San Jose utilize only 15 per cent of IICA's total resources, while 85 per cent is destined to activities in the field, in the individual countries.

### **The mandate of the countries**

The Twelfth Annual Meeting of the IICA Board of Directors and the Eighteenth Annual Meeting of the Technical Advisory Council were held in Santiago, Chile, in May 1973.

At these meetings, IICA was honoured to receive the representatives of Canada and Jamaica as members of IICA. These two members, together with the other representatives of member countries, discussed and approved the Program-Budget for 1973-1974. Other important matters were also discussed, and were approved and recorded in 23 resolutions.

Of these resolutions, the more important ones are related to the cooperative program on coffee rust and other diseases; the expansion of the irrigation program in Peru; the hemispheric irrigation program; the possible participation of Chile in the Andean Zone; the creation of a new Zone for The Antilles; reciprocal technical

cooperation amongst the countries of Latin America; training and studies on the 'Campesino' community enterprises; programming of activities for the new member states; the development of postgraduate education; external cooperation; and adjustments to the regulations of the Special Commission.

Of note is the fact that the Board of Directors resolved to add two titular representatives and two alternate members to the Special Commission from the member states of the Antilles area, as well as incorporating Canada's member as a titular representative, similar to the United States' member.



*The presence of IICA technicians in each and every country of America is an important factor in the development of the hemispheric projection.*

### **Action articulation with other international organisms**

IICA has made every possible effort to articulate its actions and programs in Latin America with the needs of countries for technical cooperation, and other international organisms operating in this area who provide it.

As mentioned in the introduction of this report, relationships with technical cooperation and financial assistance have been considerably strengthened, achieving in this manner, a truly integrated labor of the

international organisms within the inter-American system.

The following chapters of this report will briefly describe the work being carried out by IICA in America, within each of its Lines of Action, with the exception of Line II: Education, which was reported in Chapter I. Five appendices are added which provide details on the information covered in this report; the entities who have collaborated in each country; publications; participants in IICA activities, and the staff list, indicating the position held and in which country, of the individual international professional staff members.

## Chapter III



**IICA AND AGRICULTURAL POLICY**











## Chapter III

### IICA AND AGRICULTURAL POLICY



*One of the most important tasks of international organizations is to become forums for the interchange of ideas between those responsible for agricultural policies in the Member States.*

#### Introduction

This chapter summarizes the institutional work of three Lines of Action: Line I which covers analysis and information on rural development; Line V, which covers multinational integration efforts; and Line VII which is dedicated to the strengthening of institutions responsible for the administration of agricultural policies.

The content of these three important Lines of IICA Action are briefly analyzed, for the benefit of the member countries, as follows:

As concerns aspects of analysis and rural development information, IICA is aware of the limitations of the available sources of information on the current situation and tendencies of rural development in Latin America and its institutional systems, specifically systematic and up-dated information.

This situation therefore, presents serious obstacles to the establishment of national development programs and considerably limits the efficiency of technical cooperation and financial services provided by international organizations.

To overcome this deficiency, IICA is developing a series of programs aimed at compiling available information in a systematic manner, and encouraging the national institutions to up-date their own information. IICA's international technical staff is also conducting complementary research and analyses. These actions are being directed and coordinated by the Associate Deputy Director's Office for Technical Affairs and Planning, and are being carried out by all the operative units of IICA, with the support of the Inter-American Centre of Agricultural Documentation and Information (CIDIA), which depends directly from the Executive Offices.

At the same time, programs are being conducted to strengthen libraries and communication and agricultural information services within this Line of Action, with the aim of supporting current efforts in the countries to systematically compile and have available up-dated information.

In Line of Action V, dedicated to the integration of multinational efforts, IICA recognizes that products from the agricultural sector play an important role in the economic integration of the Latin American countries. The capacity to expand the internal markets of an area in the process of integration, implies a parallel process of increasing available resources so that the balance of payments remains stable year after year, a condition which is closely related to agricultural production.

With the aim of systematically organizing the activities of this Line of Action, priority is being given in the first stage, to the analysis of structures and other instruments which have been established to further the integration processes. Agreements and policies related in the main to the agricultural sector will be studied. Efforts will be made to collaborate with the countries on the articulation of their rural development programs with existing policies at multinational levels. Efforts will also be made to collaborate with the integration organisms on their studies and analyses related to the agricultural sector.

Line of Action VII, related to the administration of agricultural policies, seeks to improve the administrative aspects of the organisms in the agricultural sector, as a complementary action to improvements in technical aspects.

The national organisms are the instruments of action available to the countries to define, carry out and evaluate their development policies. The institutional system of the agricultural sector, should therefore be permanently up-dated and articulated with available resources, and adapted to policy needs being implemented, and in accordance with the conditions of the individual country.

Efforts to improve the administrative aspects of each organism within the agricultural sector will be an integral component of the corresponding program. The study and analysis of the group of organisms as component

parts of the institutional system of the sector as a whole, is the subject matter under consideration for this Line of Action. It is therefore important to know and take into account the different steps involving the elaboration, execution and evaluation of the agricultural policies and their relationship and articulation with the other sectors of the economy.

The functioning and development of adequate agricultural planning systems is one of the aspects which merits priority attention within this Line of Action. Although the countries have established organisms with responsibilities in these areas, little success has been achieved with respect to the accumulation, execution and evaluation of agricultural policies at national levels. In several countries, the lack of an adequate frame of reference is felt, for proper work plan reference within the sector and which at the same time would facilitate the articulation of rural development plans with those being conducted in other sectors of the economy.

The complementary nature of the work in these three Lines of Action, makes the joint reporting in this chapter, obligatory, on the results obtained.

## Hemispheric Institutional Action

Before entering into an explanation of actions resulting from the programs, projects and activities, it should be made quite clear that the Program for the Analysis of Rural and Institutional Development has been implemented by all the operative units of IICA, in this case, by the country representatives.

Thus, with a common work program which supplies a situation diagnosis of the sector, together with the group work of national functionaries through the National Committees established between IICA and the organisms of the agricultural sector of each country, it is hoped to attain the best possible overall view of the current problems and their possible solutions, including the particular characteristics peculiar to each country.

Due to these very characteristics, the institutional diagnosis has varied widely in the different countries. In Venezuela, for example, progress has been significant. In Peru however, little progress was made due to the rather special circumstances of finding the country in the process of reorganizing the sector. In most cases, progress has been made in the compiling and systematically organizing of data. Little has been done with respect to data analysis.

In the Northern Zone, institutional diagnostic studies have been initiated in Nicaragua, El Salvador and Honduras. It is expected that these studies will be finished at the beginning of the 1973-1974 fiscal year. Diagnostic studies of Costa Rica and Guatemala have already been completed.

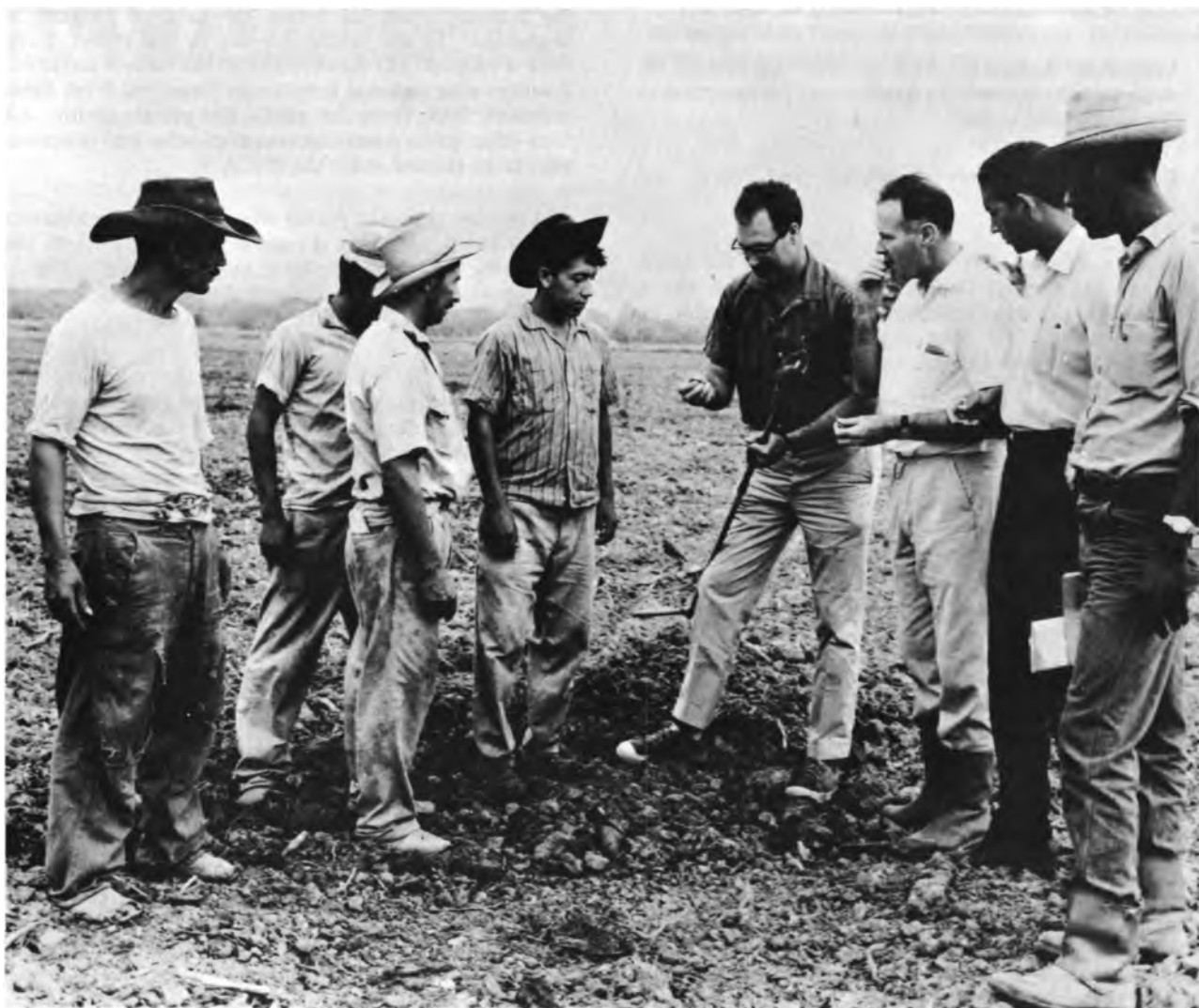
In the Southern Zone, information was compiled on rural development in all the countries of the area except Brazil; its evolution, the problems faced and priority needs have been analyzed.

Documents of this nature have been published on an internal basis, in Argentina, Paraguay and Uruguay, and which constitute methodology trials, since at this stage, uniform procedures have not been utilized. Attempts will be made to ensure uniformity of procedures in the Southern Zone as of the next fiscal period.

Analytical studies were conducted on individual institutions in Paraguay and Uruguay, without going into great detail on internal aspects. To do so, the active

participation of the national organisms would have been necessary.

In Uruguay a general study on the institutional system and sub-systems of the rural sector was initiated, as a result of constant prodding from the Associate Deputy Director's Office for Technical Affairs and Planning. The principal change foreseen for the next fiscal period will be to place greater emphasis on institutional analysis as a study of the current situation and evolution of rural development. In the Antilles, advisory services were provided on the creation of a national agricultural documentation center in Haiti, and in the Dominican Republic IICA worked towards improving the information systems.



*Agricultural policies in the countries should be reflected in close contact with the 'campesino', the immediate beneficiary of these policies.*

The program to improve the libraries and documentation centers conducted under the permanent guidance and advisory services of CIDIA, was carried on a hemisphere-wide basis. The strengthening of agricultural libraries through direct advisory services and the training of personnel was continued. A considerable number of courses, seminars and meetings were also sponsored with the aim of strengthening aspects related to information services and agricultural documentation.

More detail on the hemispheric actions of CIDIA can be found in the chapter on Special Programs.

To summarize, IICA conducted 160 activities under Line of Action I, six of which were multinational in character.

Eight activities were conducted under Line of Action V —support of multinational integration institutions—and can be summarized in the following manner:

Colombia: A meeting held on the "Agreement on Andean sub-regional integration and participation in the agricultural sector".

Costa Rica: A study completed, and foreign aid projects prepared.

Guatemala: Advisory services provided to the Secretariat for Central American Economic Integration (SIECA), on regionalization and zoning, and the elaboration of a manual for regionalization and zoning studies for Central America.

Venezuela: Advisory services provided on crop zoning, planning and marketing.

Multinational: Coordination of the integration organisms (in Central America); cost production studies for zone-classified crops in Guatemala, Nicaragua and El Salvador; and the editing and publication of production cost studies for zone-classified crops (in Central America).

Seventy-seven activities in 16 countries were carried out under the programs of Line of Action VII —Administration of Agricultural Policy—, two of which were multinational in character.

In the Andean Zone, work was conducted principally in support of the agricultural planning organisms of the area. The following objectives were attained: information related to the structure of the agricultural planning offices; stimulation and participation in the development of advanced planning methodologies; the training of inter-disciplinary teams, at national levels, capable of preparing and evaluating agricultural projects.

Important progress was achieved in Bolivia, Ecuador, Colombia and Peru in the institutional organization and coordination program, including an analysis of the

administration and management of rural development organisms, the improvement of administrative services, as well as providing training and advisory services.

The national programs, in this case, can be considered on a long range basis, and are being conducted according to their specific programs, carrying out diagnostic and research studies on the institutions of the sector, and working towards the improvement of their organization and management services.

Work was carried out in Colombia, in five principal projects under the National Agricultural Training Program (PNCA). The following areas were included: rural social development; agricultural education; marketing and credit; administrative improvements; and natural resources.

Within the objectives and current action guidelines of the PNCA, there has been unquestionable consistency in the training work for which the national program is responsible. In the period covered in this report, there were a total of 343 participants in the various activities. Twenty-nine national institutions benefited from these activities, both from the public and private sector, and four other Latin American countries, who sent functionaries to be trained under the PNCA.

Eighteen students passed the academic requirements of the ILMA courses and have begun work towards the Marketing Technician diploma awarded by IICA/PNCA, an inheritance of the defunct Latin American Agricultural Marketing Institute.

It should be mentioned that the administrative improvement project has initiated work aimed at reinforcing the training programs for functionaries in this field. Worthy of mention is the ready acceptance accorded the Series of Executive Meetings programmed by PNCA, dealing with political aspects of specific areas of agricultural activity, by the various entities in the sector.

In the Southern Zone, work was conducted specifically in planning, organization and coordination of the agricultural sector, within five projects: one multinational, and four national. Of multinational import is the project concerning the cooperation mechanism between the agricultural planning offices of the Zone. The four national projects include: the training cycle on the elaboration and evaluation of agricultural projects in collaboration with BID; advisory services provided on socio-economic studies and on the formulation of policies, programs, projects and schemes for the evaluation of investments in Paraguay; collaboration with the sectorial planning office of the Ministry of Agriculture of Uruguay on sectorial planning methodology and training in the elaboration and evaluation of agricultural projects in Argentina.

A particularly intensive phase of this program was in personnel training, specifically in the techniques for elaborating, analyzing and evaluating agricultural projects and programs.



In Argentina, the Regional Agricultural Planning Program has completed the stage of assisting in the formulation and implementation of the development project for the central Eastern zone of Santiago del Estero. At this stage, the intensive collaboration of IICA finishes, and in the future the Institute will lend only periodic support on the evaluation of the project's progress. Negotiations are well advanced to provide support action to other regional programming projects of greater scope in the Chaco Argentino and the Pampas region. In the Chaco Argentino there is also a possibility for provincial-level cooperation on the formulation of a development project which will cover two million hectares.

In Brazil, an in-depth knowledge of the current situation, through the ACIRS project, has prepared the way for the planning stage with the participation of the Integrated Investments Program in the agricultural sector of Rio Grande do Sul. At the same time, efforts are being continued to complete the diagnostic studies of other areas, such as the Cacao Zone, which will later provide the necessary information for perfecting diag-

nostic methodologies for large areas. These studies should provide the information needed to initiate a regional development program, once the essential integration of other programming and action institutions of the Bahia State government and SUDENE has been accomplished.

In Panama, in the Northern Zone, advisory services were provided for the planning of the agricultural sector, methodically supporting the annual planning and programming process of the Ministry of Agricultural Development. In El Salvador, work was carried out under the management analysis project for the agricultural sector. In Honduras, IICA collaborated on the elaboration of the Guayape Valley Program, which resulted in the elaboration of specific projects which the government will be presenting to BID for possible financing. In Mexico, IICA provided advisory services and collaborated on the planning for the agricultural sector.

The specific work related to advisory services on management in Costa Rica and Guatemala, are discussed in the chapter on Special Programs.



*Meetings held to decide on courses of action, should reflect the needs and realities of the rural sector.*



## Chapter IV



**IICA AND AGRICULTURAL RESEARCH**











## CHAPTER IV

### IICA AND AGRICULTURAL RESEARCH



*Research should be carefully planned . . .*

#### **Introduction**

Agricultural research has been emphasized in the operative plans of IICA's Lines of Action. Priority has been assigned to the contribution of agricultural research to food production, since this is an area of great concern for the development of our countries.

Current data supplied by CEPAL indicate that agricultural production increases for Latin America, including the Caribbean, was a mere 1.7 per cent higher in 1972 than the previous year, which was also low. As a result, IICA has assigned the following priorities within

agricultural research, to contribute to a solution of these problems:

- a. Food production
- b. Production of raw materials for the national industries
- c. Production of goods which reduce the expenditure of foreign exchange
- d. Production which will induce foreign investments

IICA's Hemispheric and Humanistic Projection understands agricultural research as a function oriented towards satisfying the common weal. IICA is also concerned with the dissemination of research results, and efforts are made to distinguish between agricultural extension and technical cooperation, the former being an educational function and the latter being a service.

It is felt that research efforts should not be limited to physical and biological aspects. Research programs tied into the everyday reality must promote the application of new technologies through an institutional system to select the beneficiaries, and therefore the establishment of complementary economic and social research systems are essential.

From the humanistic point of view, IICA views research as an instrument to increase the capacity to absorb labor on the Latin American market. However, this does not include solution to problems derived from a redistribution of income in quantitative terms only,

and implies the obligation to produce applied technologies which will lend the corresponding dignity to manual labor, as a legitimate source of income in rural areas, and as a means for achieving an integral development of man.

IICA's action in the field of research, in accordance with the General Plan, is limited where direct research activities are concerned, but is extensive in coordination and technical cooperation activities, emphasizing those aspects related to the planning and administration of research, as the means to obtain a final objective: to improve the standard of living in the member countries.

The reinforcement of research planning and administration must necessarily be linked to the strengthening of planning and administration aspects of other sub-sectors within the agricultural sector, which contribute to a redistribution of increasing income, through the application of research results.



*... before being taken to experimental stations.*

## Research problems in the Tropics

In all countries which have primitive agricultural systems, agriculture is less productive and more haphazard, regardless of whether in a tropical region or not. 'Agricultural technification' is needed to remedy the situation, that is, the introduction and utilization of new and improved inputs: drainage, irrigation, improved seed, fertilizers, insecticides, fungicides and more applicable and improved agricultural practices.

In the Tropics, distinction must be made between *dry* and *humid* tropics. Under natural conditions, the dry tropics is not very productive and somewhat risky from an agricultural point of view. The situation can be improved with irrigation, and large crops can be obtained if the soils are fertile.

In the humid or wet tropics, studies have shown that very old latosol soils predominate. These soils are very permeable with low phosphorus content, and limited nutrients available for plants. Under these conditions, growing plants utilize the nutritive elements as soon as they become available, and thus completely eliminate the possibility of retaining any in the soils.

From the point of view of available energy, it has been found that tropical regions have a greater potential productivity than temperate regions, as far as total production of dry matter per unit area and time element are concerned (i.e.: tons per hectare per year). Mr. Humberto Tasayco, a Peruvian who studied in Turrialba, indicates in his thesis that the relation is 1 to 4 and 1 to 8 for the productive potential of the temperate and tropical zones, respectively.

However, as a result of the reduced soil capacity to retain nutrients, extensive areas of the humid tropical regions must be cultivated; perennial tree crops, multiple cropping systems similar to those found under natural prevailing conditions, or flooded crops such as rice must be utilized, to be able to make the most of the high productive potential.

However, these general guidelines are not necessarily valid for the whole tropical region, since the area does not present uniform or even similar conditions, but rather a complex group of units with varied characteristics which must be identified so as to achieve a more efficient management and a maximum utilization.

Hence the repeated recommendation by people in authority within the humid tropics, as a preliminary step to conducting soil utilization programs in these regions. (Important reports on this problem: Report of the FAO Regional Meeting on Soil Utilization in Tropical Zones, Ceylon, 1951; Fertilization Principles for Tropical Regions, by M. R. Chaminade; recommendations from the Seminar on Colonization Systems for the Humid Amazon Tropics, held in Belen, Brazil, November 1972).

One of the more immediate benefits would be a clear delineation between agricultural and forest areas. Holdridge indicates a serious problem in which a tremendous amount of effort is being wasted in attempting to develop annual agricultural enterprises in areas which are only suitable for perennial crops. Such inadequate utilization of lands creates serious social and economic problems which cannot be solved through agricultural research, extension services or sociological studies, since what is happening is that man is being robbed of the productive potential of extensive areas which are only suitable for forests or perennial crops.

The need to perfect traditional agricultural systems should be noted (i.e.: periodic burning of vegetation, and mixed or multiple cropping), since they have proved to be better in the tropics than the homogeneous, mechanized cropping systems of the temperate zones. This is a promising area for agricultural research within an humanistic projection.

## IICA Action in the Northern Zone

Last year's report indicated that a large proportion of the institution's financial resources assigned to research projects under this Line of Action were utilized in the training and professional improvement of technicians from organizations working on animal production, research on the utilization of pastures and forages and on economic rearing systems for dairy herds.

Coordination actions at regional levels, with national animal production improvement programs merit special notice. Evaluation studies of these programs have been initiated.

Considerable emphasis has been given the cooperative efforts for the improvement of grain legume production, thus avoiding duplication of efforts.

The Central American Cooperative Program for the Improvement of Food Crops (PCCMCA) continued to receive help from IICA, and research results of the program have been disseminated. Guatemala and El Salvador are the two countries to have received the greatest impact in this respect.

IICA also sponsored and organized the III International Meeting on the Production and Utilization of Forages. Advisory services and supervision were also provided research programs in Honduras, El Salvador and Nicaragua.

IICA action in research on forages and animal production in the Northern Zone, were programmed as country level projects which included advisory services provided research institutions on the organization, orientation, supervision and evaluation of research projects in this field; in-service training activities for researchers and technicians; and the conducting of national seminars on animal husbandry research methodology.

Worth stressing as an important complement to the Northern Zone research activities, is the work at the Tropical Training and Research Center at Turrialba (CTEI), which contributed substantially to the progress in agricultural research in Latin America, with over 100 research activities related to tropical crops and soils,

tropical animal husbandry and tropical forest sciences. The research activities covered areas from plant physiology to the study of rapid growth forest species, and animal production and nutrition. Details on the research activities carried out can be found in the corresponding appendices (activities and bibliography).



*Research being carried out in laboratories.*

### **Action in the Andean Zone**

Under Line of Action II: Agricultural Research, the Andean Zone of IICA has been working on stimulating program orientation as a development function of the countries, and at the same time to effect the dissemination and application of research results. It has also been considered of importance to support the efforts in the countries to conduct projects destined to provide scientific and technical bases for internal regionalization and for regional development planning.

The Regional Cooperative Program for Animal Husbandry and Pastures will be discussed in detail in the

chapter on special programs, because of its close articulation with the Regional Cooperative Program for the High Andes.

Within the program to strengthen socio-economic research efforts, it is expected to continue work towards the integration of the socio-economic with the physical-biological research programs at the agricultural research institutions, contriving to establish socio-economic research units or programs at these institutions.

Some of the more important activities in the Zone for the period covered by this report, are as follows:



The training and counselling project on agricultural research accomplished its programmed objectives. Participants from the different countries indicated the need to organize multidisciplinary teams to support specific development programs, such as establishing the integration of functions to promote social and economic development.

Improvements on the programming of research in pastures and forages were also achieved, and through the Agricultural Research Division of the Ministry of Agriculture and Livestock in Bolivia, research programs in potatoes, cereals, etc., were also influenced.

In a similar project in Ecuador, non-programmed activities were introduced to train technical personnel from INIAP in the utilization of libraries.

In forestry research, a Regional Working Group was established for the introduction of forest species to the Andean Zone.

Researchers from the Forest Services and the Faculties of Forestry Engineering of the area are members of this Group. Their main objective is to promote, support and coordinate research projects related to the introduction of species and forest plantations, covering social and economic as well as biological aspects. The working Group will also be a valid instrument to influence the development of forestry in the countries, as well as motivating forest research *per se*.

Meetings for forest researchers were organized in Ecuador as well as Bolivia, with the purpose of analyzing forest research problems. It was agreed to hold working meetings in the latter half of 1973 under IICA coordination, for researchers from the faculties of forestry engineering and forest services, with the aim of structuring national research programs.

The program to strengthen socio-economic research is in its promotional phase. The aim is to make functionaries at the highest level aware of the imperative need to integrate socio-economic with physical-biological research; the idea has been well received. To this end, the program included a regional seminar on the socio-economic aspects of agricultural research, and personal contact was made with various representatives and technicians of the research organizations.

Special emphasis is being given training in technical writing and scientific communications in Peru, Ecuador and Venezuela. It is felt that training in this area will help change researchers' attitudes with respect to the need to disseminate their research results, as well as to take the social and economic impact of their research into consideration.

At the Inter-American Center for Agrarian Reform and Rural Development (IICA-CIRA) in Bogota, Colombia, research work was closely tied into training programs, and will therefore be described in the chapter on structural changes.



*Research in the laboratory.*

### **Action in the Southern Zone**

Socio-economic research aspects have also been specially emphasized in the Southern Zone countries (Argentina, Brazil, Chile, Paraguay and Uruguay). Although the program is relatively new, important progress has been made as part of Line of Action II, in promoting research into the economic and social aspects of agricultural production problems, and the application of development technologies to benefit the rural man. As part of the program's basic strategy, an inventory study was made of the institutions in the Zone, interested in socio-economic research, and an analysis was made of the work underway at the principal organisms:

Considerable information was obtained in 1972–1973 through a multinational project on a diagnostic study of socio-economic research, and a national project to obtain socio-economic information in Uruguay. In the former, information was compiled on socio-economic research institutions in Argentina, Brazil and Chile, and in the latter, support action was provided by a technical group working on economic matters at an agricultural research center. The sudden death of the technician responsible for this Line of Action in Argentina has affected the program, which is currently going through a period of transition.

In Uruguay, advisory services were provided in relation to the registration and analysis of animal husbandry production systems, which will serve as a

basis for the analysis of results obtained at La Estanzuela on a study to detect the independent variables to determine the physical results of the system. A more rapid adoption by farmers and animal husbandmen of the technology resulting from research experimentation on beef production is hoped for.

In Paraguay, the most positive results were obtained from the program in cooperation with the Ministry of Agriculture and Livestock on the organization and programming of agricultural research. Advisory services were provided on the formulation of the national program, and IICA collaborated directly on the design of the research programs for rice, wheat, soya, animal husbandry and tobacco.



*Research results are analyzed by teams of technicians.*

The most important occurrence in Brazil for the period covered in this report was the creation of the Brazilian Agricultural Research Enterprise (EMBRAPA), a non-profit civil association which IICA has been counselling. The association is tied in with the Ministry of Agriculture, and replaces the corresponding department at the Ministry. EMBRAPA will be giving priority to research in the Amazon region, the North East, and the 'Cerrado' Zone, with particular reference to food-stuffs and exportation products.

In cacao research, IICA has been working the CEPLAC/CEPEC program with three technicians, four short-term consultants, three fellowships in Turrialba, and the partial financing of the Inter-American Course on Cacao in Bahia, the Inter-American Meeting of Agricultural Research Directors, and the Tropical Ecology Seminar, already mentioned in this report.

For the second time in Brazil, CEPEC (Cacao Research Center, Executive Commission for the Recuperation Plan of CACAO - CEPLAC), an International Course on Cacao was given in September-October, 1972, to a group of 25 agronomists from 8 countries (7 in Latin America). IICA cooperated in this course with the services of a highly qualified technician and seven fellowships for non-Brazilian Latin American participants. This course was previously given at the Turrialba Center, sponsored by the American Cocoa Research Institution (ACRI), but will continue to be given in Brazil, and will be sponsored by IICA/ACRI/CEPLAC.

## IICA Action in the Antilles

In the Dominican Republic, work was conducted on two projects: Advisory services provided in Training and Research Programs, and the strengthening of the Coffee and Cacao Department of the Secretariat of Agriculture. Several activities within the former project included advisory services provided the grain legume programs; a research work plan for improved seed to serve as a nucleus for propagation purposes. At the same time, the ecological zoning study for 10 basic crops has just about been finished.

Three activities were programmed within the second project, in common accord with two IICA specialists in coffee and cacao. At the same time, three Dominican technicians were sent on a study field trip to Costa Rica, Colombia and Jamaica with the purpose of seeing the research work underway in those countries. Worthy of mention is the cooperation of IICA-CIDIA on the organization of a specialized library on coffee for the Training Center at La Cumbre.

In Haiti, work was mainly carried out on the feasibility studies for the creation of Center for Agricultural Technicians in Coffee Production. Advisory services were provided on research being conducted by private groups as well as the Forest Service of Haiti on the introduction of forest species of economic interest; and on the organization and development of the Gonaives Plain, through studies on personnel, financing, drainage and land recuperation.



## Chapter V



**IICA AND THE DEVELOPMENT OF PRODUCTION**

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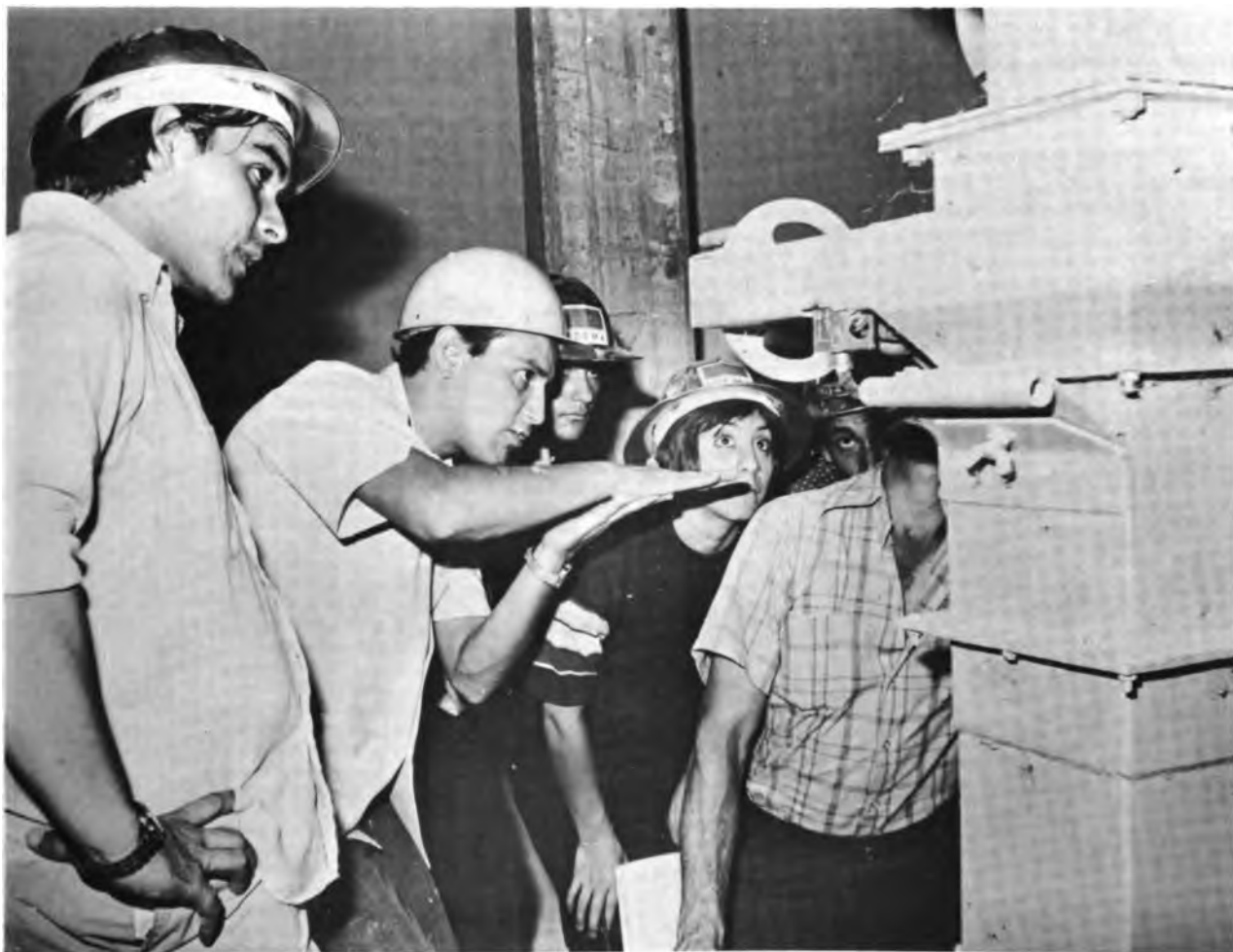






## Chapter V

### IICA AND PRODUCTION PROMOTION



*Training in marketing and agricultural commercialization matters plays an important part in increasing production in the countries.*

#### Introduction

Per capita increase in agricultural and food production in Latin America, for the period 1964 to 1968, was scarcely greater than the increase in population, a situation which continues today.

It is absolutely essential to increase production and productivity. IICA assists its member countries in their efforts to obtain a sustained production increase, working with the planning offices who evolve the biological and social research plans, provide inputs, technical assistance, credit and marketing, develop cooperatives and colonization, and agriculture - derived industries.

The causes of the problems in these areas are many. On the demand side, the slow growth of income and its unequal distribution limit the number of people with an effective purchasing capacity. On the supply side, there are structural and other factors which reduce production elasticity. Perhaps amongst the prime reasons for current conditions are the totally inadequate land tenure systems. In second place, serious deficiencies in state-promoted activities to increase supplies could be mentioned. These include scarcity and the deviation of agricultural credit, deficiencies in technical assistance and extension services, as well as in investment programs and price and incentive policies.

As per the General Plan, IICA will assist the countries in their efforts to achieve sustained production increases.

At the same time, efforts will be made to collaborate with the national organisms on the orientation of their actions, so that the 'campesino' will participate more adequately in the benefits derived from production increases as well as receiving a greater proportion of the public services offered to attain these increases. Special attention will be given to stimulating and supporting national institution programs aiming at increasing

employment in rural areas.

IICA's work under this Line of Action (IV) has been developed in the following manner: three programs in the Andean Zone; one in the Northern Zone; one in the Antilles; five in the Southern Zone; one at CTEI, in Turrialba, and support action to work with the rural youth program in San Jose. A total of 106 activities have been carried out in this Line.



*The improved and increased use of inputs produces larger and better crops.*

### Action in the Andean Zone

In Peru, adverse climatic conditions seriously affected the production of important crops such as potatoes in the Sierra and along the coast. Heavy rains induced floods which caused serious losses in rice, cotton, fruit and vegetable crops. On the other hand, sugar cane

attained the highest levels of production in the history of the country: 920,000 metric tons.

Fifteen meatless days a month were imposed along the coast, with the aim of stimulating the production development of other meat to substitute for beef. This resulted in a 42 per cent increase in the consumption of



fowl, and a 15 per cent increase in pork, and an 8 per cent increase in lamb or mutton.

The decision has been made to adopt important modifications in production programming through the National Crops Plan, for the 1973/74 biennial period.

The Ministry of Agriculture has elaborated and is carrying out a National Marketing Infrastructure Program, which represents an investment of 1,300 million soles. The program aims to increase the storage capacity of the country from 28,000 to 352,000 tons.

In accordance with the General Plan, IICA action in this country has been oriented towards institution building. Special attention has been given to the strengthening of the Sectorial Office for Agricultural Planning (OSPA), by means of a training cycle for a group of professionals in the techniques required for preparing and evaluating agricultural projects.

Professional personnel working in the agricultural sector, specifically in research or university centers have received training in public administration aspects. Other training aspects covered areas in agricultural marketing, and promoting and supporting the creation of a marketing training committee to be composed of the Marketing Director, CENCIRA and OSPA. A national technical cooperation program was prepared together with this committee.

In Bolivia, the proliferation of organisms working in marketing has made their tasks doubly difficult; IICA concerned itself with achieving the institutionalization of all marketing work into one specific organism. As a first step, advisory services were offered the Ministry of Industry and Commerce on the marketing of rice. The National Rice Enterprise was created at IICA's suggestion, and in-service training has been given its functionaries. A Course on the Preparation and Evaluation of Agricultural Projects (PEPA) which was programed under the IICA-BID agreement, was successfully completed.

In Ecuador, the program to strengthen the colonization organisms completed its activities in accordance with the Operative Program. A course was given on colonization and was complemented with advisory services provided the corresponding organisms. The specific objectives to train personnel in charge of the national colonization program were accomplished, and counselling services will continue to be given on the planning and carrying out of specific projects. In this manner, a greater degree of preparation and coordination was achieved on the analysis and technical orientation of several projects.

In Venezuela, work was oriented principally towards the strengthening of the organisms responsible for agricultural marketing. With the initiation of the Hemis-

pheric Marketing Program, and the full time assignment of a technician in this field to the representative's office in Venezuela, work has been started on a clearer definition of objectives at the country level.

Concurrently, the part time services of a technician from the Regional Office was assigned to collaborate with the Agricultural Marketing Corporation and the Ministry of Agriculture and Livestock in specific aspects related to marketing.

The National Planning Committee designated the following commissions related to various aspects within this Line of Action: Extension Commission (Extension Director, Head of the Agricultural Sector of CORDIPLAN and an IICA representative); Marketing Commission (IICA Marketing Specialist, Head of Marketing and Head of the Economics Division of the Ministry of Agriculture and Livestock); Crop Zoning Commission (Research Director, Head of the Programing and Budget Office and an IICA representative).

In Colombia, in-service training in marketing has been offered technicians from other countries of the Andean Zone. IICA collaborated in a course on the administration and management of warehouses and silage plants for the storage of grains. Selective bibliographic information was compiled on agricultural marketing. IICA also participated in an international seminar on the increase in production of beef cattle in the tropics which was held in Cali.

## Action in the Northern Zone

The programs and projects in Line of Action IV in the Northern Zone, were oriented principally towards promoting national institution coordination with respect to planning and conducting specific projects for the development of arid areas, as in Mexico. Support action was also provided on government policies to achieve self-sufficiency in basic food crops as in El Salvador.

Perhaps the most outstanding activities were those related to promoting the formation of national committees and councils for the production and utilization of forages, and to coordinate them into a regional program, establishing a system of multinational communication and interchange. IICA's activities in this area has promoted the institutionalization of the cooperative program for the production and utilization of forages in Honduras.

Fourteen activities were conducted in Costa Rica under Line of Action IV, including the production of improved seed from improved coffee, cacao, bean, macadamia and other cultivars, cooperative work with the Regional Agricultural Center of San Carlos on the development of a project for the rearing of dairy calves, and the starting of experimental forests with valuable species.

Five activities were conducted within the projects programed for El Salvador, under Line of Action IV. Of particular importance were the technical assistance services to the Salvadorian bean program, and the evaluation of its efficiency, and the advisory services provided the National Agricultural Technology Center (CENTA).

Two principal activities covered the work in Guatemala under this Line of Action. The first was related to an evaluation of the experimental plantations in Peten, determining their work plans; and the second one dealt with a technical revision of the practical work resulting from the PEPA course.

In Honduras, IICA worked principally on the evaluation of the national forage production and utilization programs, and the advisory services provided them.

In Mexico, IICA provided advisory services on the integral programing of extension activities, and to the IV Meeting of the Latin American Association of Animal Production, with a seminar on animal husbandry.

The pre-feasibility forestry studies for Rio Escondido and collaboration on the pastures and forages program were the two important activities which were carried out in Nicaragua.

Three important activities which were carried out in Panama were: advisory services to the pastures and forages program, participation in the III International Meeting for the Production and Utilization of Forages, and counselling services to the Ministry of Agricultural Development on the structuring and organization of the Agricultural Development Bank of Panama.



*A most important aspect is to begin quality control work in agricultural production.*



*Floating markets like this one should be replaced by markets which provide more adequate facilities with improved sanitary conditions.*

## Action in the Southern Zone

Southern Zone action was concentrated into three principal programs: technical assistance in credit; training and advisory services on colonization in Uruguay; and irrigation in the temperate zone, which will be described in full detail in the chapter on Special Programs.

The technical assistance program on credit is being developed through the national projects with the necessary adjustments pertinent to the conditions of each country of the Zone.

In Argentina, the agricultural credit training and advisory services were handled partly through the sponsoring of a seminar on Directed Credit, and also through the promotion of joint emphasis on technical and credit assistance.

In Brazil, activities were concentrated on the strengthening of the institutional structure related to agricultural credit policies, through advisory services provided the Advisory Commission for Rural Credit; a change in government thinking de-emphasized the importance of rural credit to benefit a land distribution program, and this has therefore resulted in a change of emphasis in IICA's work.

In Brazil, progress was also accomplished with respect to the objective of contributing to the creation of new distribution models for rural credit and the establishment of credit control and coordination mechanisms, and can be seen in the substantial improvements introduced in the Central Bank of Brazil concerning the coordination, control and evaluation mechanism for special rural credit programs.

At the same time, progress was achieved on the formulation of a national training program for rural technical personnel and on the improvement of educational rural credit procedures.

The activities contemplated for Chile, to contribute to the initiation of new technical assistance procedures, progressed satisfactorily as far as defining their objectives. They have not as yet become operative due to the

obstacles presented by the continued restructuring and changes in orientation of the national organizations.

Agro-economic studies have been encouraged in Chile, Uruguay and Paraguay, to facilitate the programming and carrying out of technical cooperation activities to be based on plans for the exploitation of production units, and the conducting of socio-economic studies. These actions were complemented with in-service training and direct advisory services to interested organisms, in credit and technical assistance. In Paraguay and Chile, they also included the elaboration of plans for the training of technical personnel by the national organisms themselves.

With respect to the irrigation project in the northeast of Brazil, and which is not included in the Irrigation Program for the Temperate Zone, the objectives to contribute to the accelerated programming of operative training in irrigation, and the institutionalizing of a training project in this subject matter were accomplished with the direct participation of IICA technicians.

IICA has continued its support of the Colonization Program of Uruguay, and continued providing opportunities for the training and improvement of professional personnel in the specialized areas essential for the preparing and evaluation of colonization projects and the joint consideration of problems by interdisciplinary teams.

## Action in the Caribbean

Three activities were conducted in Haiti under this Line of Action: a national course for field agents from the National Program to Promote the Cultivation of Grain Legumes; collaboration with the organization responsible for the development of the Gonaives Plain, and advisory services provided on the implementation on the Five Year Plan for Coffee Development.

In the Dominican Republic, two activities were conducted under this Line of Action: advisory services were provided the Cacao Research Program, and promotional work on the creation of a Grain Legumes National Program was undertaken.

## Chapter VI



**IICA AND STRUCTURAL CHANGE**

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## CHAPTER VI

### IICA AND STRUCTURAL CHANGES

#### Introduction

Progress achieved in Latin America in agrarian reform processes over the 1972–1973 period covered in this report are of importance. Their impact has been strong, particularly in an aspect which IICA has been strongly emphasizing: 'campesino' community enterprises. These were originally conceived as a way to facilitate and accelerate the economics of and the mass participation in land distribution processes, and have now become an integral part of Latin American thought concerning agrarian reform.

As a matter of fact, the Latin American nations, at a meeting in Panama of the executives responsible for agrarian reform in their respective countries, agreed on, and clearly defined that the community 'campesino' self-managed enterprise is an efficacious manner to promote the participation of the 'campesino' in the development process, while stimulating the modernization of 'campesino' agriculture, on a competitive basis, and therefore converting it into an immediate source of income redistribution.

Seven countries have included into their agrarian reform legislation dispositions pertaining to community appropriations, and five other countries will probably be adopting legislative measures on community enterprises in the very near future.

It is easy to foresee the need for decisions to facilitate international technical cooperation action to implement the movement to promote the community enterprise in these latter five countries and others. It is essential, for example, that the countries be training in agro-economic and physical planning, in business administration and in 'campesino' organization.

Existing national centers would seem to be the institutions most suitable for promoting these community enterprise training programs. At the Sixth Meeting of Agrarian Reform Executives in Panama, the participants requested IICA to prepare and conduct a hemispheric program oriented towards the training of national functionaries in the subject areas indicated above, at these national centers.

At the Twelfth Annual Meeting of the IICA Board of Directors held in Santiago, Chile, in May 1973, resolution IICA/RAJD/Res.11(12/73) was approved, autho-

rizing the Director General to elaborate a training and study program on 'campesino' agrarian reform community enterprises, together with the National and Regional Programs and Centers for research and training in agrarian reform.

The program, to be elaborated by whatever means would seem to be indicated, would be submitted for consideration by the Board of Directors at the next annual meeting. The Director General was authorized to utilize a given sum from the General Working Fund for the elaboration of this program.

The above only serves to confirm IICA's resolution to promote and support work on structural changes in the Member States, in accordance with the dispositions of the General Plan which clearly establish the basic strategy for IICA's programs to be institution building, on the understanding of course, that it is the countries themselves who decide the orientation and content of their development efforts.

With respect to the organizations working on agrarian reform and 'campesino' organization programs, IICA's experience has facilitated the identification of a series of internal as well as external factors which limit the development of these institutions. The programs under Line of Action VI therefore, are directed towards collaborating with national authorities in their efforts to overcome these limiting factors.

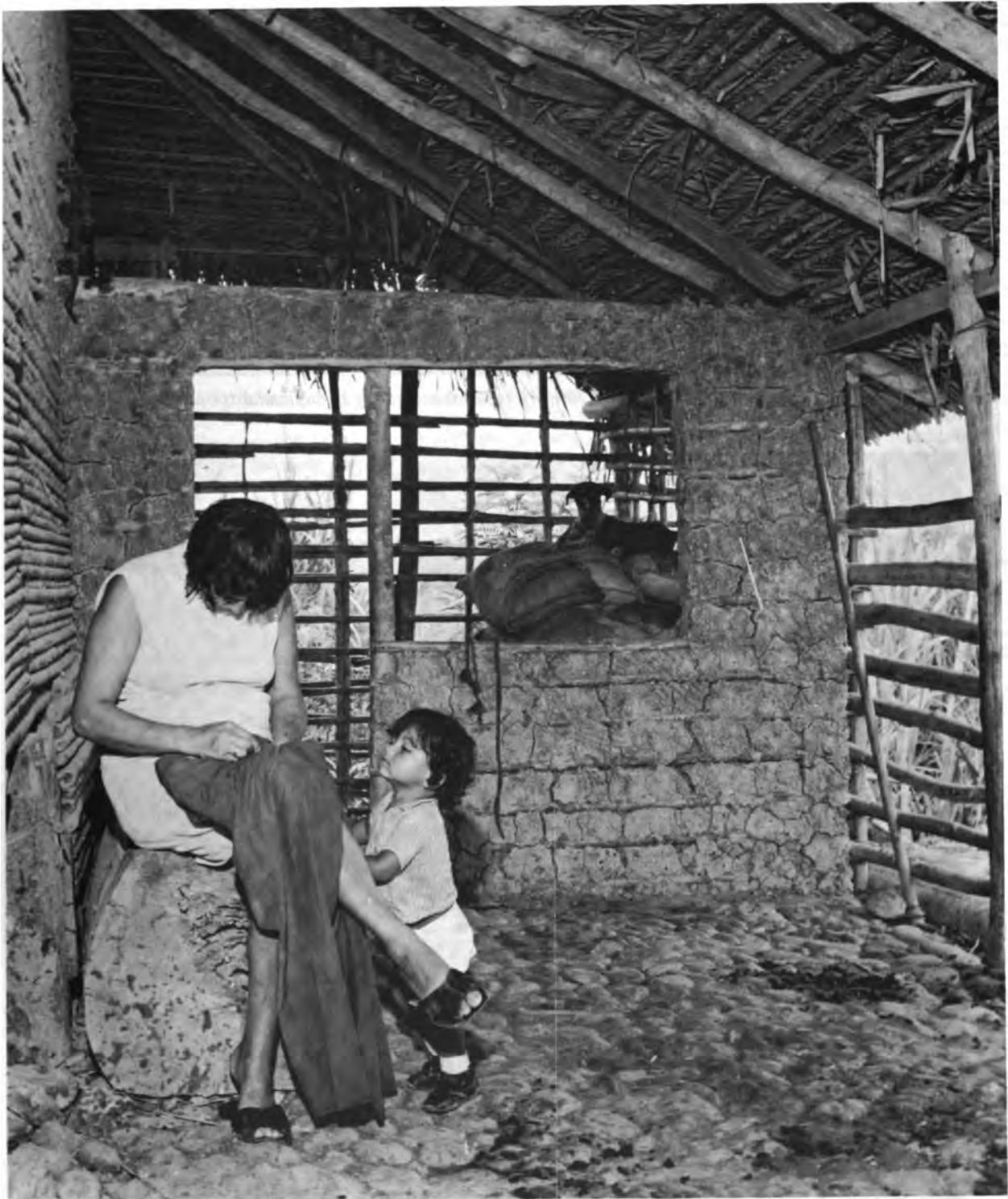
Briefly summarized, these factors can be explained by the low priority assigned this type of work within the national programs; the allotment of insufficient resources with respect to the magnitude of the problem; the failure to stimulate the participation of other organisms; the failure to adapt some programs to the particular conditions of some of the countries; and the lack of technical personnel and adequate methodologies to handle the complex problems inherent to this type of program.

IICA's answer to this challenge has been to initiate programs on agrarian reform, 'campesino' organization, participation and training, and extra-curricular 'campesino' education. For the period covered in this report, this includes 80 activities in 14 countries, seven of which are multinational in character.



*The 'Campesino' of America...*





*... and his family ...*



*... expect the governments to work towards increasing their standards of living ...*



*... to ensure them a more secure future.*

## IICA Action in the Andean Zone

The Andean Zone worked on Agrarian Reform aspects, through three national projects, two of which involved working on the strengthening of agrarian reform organisms in Bolivia and Ecuador, and the third on strengthening the cadastral and evaluation units of IAN in Venezuela. The multinational project on building the agrarian reform organisms of the Andean Zone progressed satisfactorily, with the participation of Bolivia, Colombia, Ecuador, Peru, Venezuela and included Panama.

The progress of this program has been different in each country, depending largely on the individual dynamism of the agrarian reform processes. The scope, intensity and objectives of these processes vary considerably from country to country. Practically all types of reform possible can be found in the area, as to origin, development and individual dynamism.

Worthy of note is the work in Venezuela as a result of the interest in agrarian reform, expressed through a special agreement and the presence of a specialist in this field. Ecuador has done notable work on revitalizing the agrarian reform process, through improved legislation and the restructuring of the organism responsible for it. Activity in this area has been very limited in Bolivia, and work in Peru has been limited to advisory services provided with respect to training.

Due to the scarcity of human resources, little progress was achieved with respect to the research objective of the program, although perhaps the work of IICA-CIRA in this area, in Colombia, makes up for this deficiency.

As part of the program strategy, ways are being sought to link the training courses with the research being conducted on the participation of 'campesino' groups with the aim of forming inter-disciplinary teams within the different institutional units. Through course-work and in-service training, the teams will master the theoretical and methodological instruments needed to acquire a critical view of the process underway, so as to be able to correct distortions, and channel reforms in the agrarian structure with an authentic sense of structural change.

The 'campesino' organization program to develop the corresponding organisms in Bolivia, Ecuador, Peru and Venezuela has progressed slowly, mainly as a result of the peculiar characteristics of the work in this area, and the need to adjust to changes produced by the different political actions in the countries involved.

In Peru, work mainly involved support action to the different institutions concerned with 'campesino' training. This work was carried out under Line of Action VI, and in other lines as well, such as in marketing aspects. Action in Venezuela was similar to Peru. In Ecuador, emphasis was given to studies which will permit an ulterior training program more closely related to the existing development process in the principal organizations.

IICA feels that it is necessary to give greater emphasis to research processes which include the participation of the 'campesino' in the development process. In this manner, research would be closer to reality and would serve as a basis to implement 'campesino' training projects to strengthen their organizations so as to become a powerful mainspring for structural change.

Agrarian reform processes have been underway for many years now in the Andean Zone, with varied orientations, results and accomplishments. In the majority of cases however, the processes have progressed beyond the promotional stage and have reached the stage of producing and consolidating new agrarian structures. Hence IICA's programs are oriented towards promoting and developing second and third level structures which will permit an efficient articulation of changing processes in production areas, with those in other sectors of economic and social activity.

For the specific case of 'campesino' organization, it is essential to develop and apply adult education methods for rural areas which include the participation of the rural adult in research and in the elaboration and carrying out of training course contents that they feel they need.

## The Inter-American Center for Agrarian Reform and Rural Development (IICA-CIRA)

At the social science research and training center in Bogota, Colombia, dedicated to the study of and training in structural change processes, work was carried out in five basic programs. Two of these programs come under Line of Action VI and received the highest priority in work output at the Center.

The agrarian reform program of fundamental importance in CIRA, included two projects: one related to the study and promotion of 'campesino' community enterprises, and the other to a study on the state of agrarian reform development in Latin America.

Specific research studies were conducted on community enterprises. Three diagnostic studies, varying in degree of detail were conducted in three countries, with serious limitations in emphasis, method, availability of time, personnel and sufficient and reliable documentation.

The main activity in education was the inter-American course on 'campesino' community enterprises, which was actively complemented with a seminar on the same subject organized by the Executive Offices.

In its support actions, CIRA dedicated considerable administrative and technical energy to two courses and one seminar given in the Dominican Republic. Advisory services and in-service training were closely linked to the research activities on community enterprises carried out by national organisms, and to the diagnostic studies on reforms requested. Direct assistance was also provided to the sectorial and reform organisms in Bolivia

on the reorganization of the National Agrarian Reform Service, and on the projection of new Andean sub-regional education and training programs in agrarian reform.

The 'campesino' organization program included two projects: 'campesino' educational training and a study of 'campesino' organization and participation. In both cases, priority was assigned research functions. In the first project, a meeting of experts was held on the reorientation of rural extension, and experimental research was conducted on training methods for professionals working in development. In the second project, three institutional diagnostic studies were carried out, and in-service training was offered three sociologists in research methods for 'campesino' organization.

### IICA Action in the Northern Zone

IICA action in the Northern Zone under Line VI, was carried out in four principal areas:

- a. The promotion of and advice on the studies to serve as a basis for policies for the orientation of agrarian reform and 'campesino' organization programs. This action was carried out principally in Mexico and Panama, and in El Salvador. The study on the restructuring of the organization responsible for agrarian reform was completed.
- b. Improving the planning, organization and operational aspects of the agrarian reform institutions. Advisory services were provided in Guatemala on 'campesino' organization as part of the National Development Plan, while in Mexico special attention was given to improving the administration of farms and communities of already organized groups.
- c. The training of technical personnel from the national agrarian reform and 'campesino' organization programs in El Salvador and Panama.
- d. 'Campesino' promotion and organization activities were carried out in all the countries of the area, with particular emphasis in Mexico, Honduras and Costa Rica.

Advisory services were continued on the Campesino Productivity Program of Mexico. A series of studies were conducted on the effectiveness of the promotion and organization systems and on the impact of television programs on the members. Also in Mexico, a study of the 'campesino' organizations was initiated by a team of IICA specialists who interviewed functionaries from the National Agricultural Bank, the Campesino Productivity Program, the Department of Agrarian and Colonization Affairs, and a field study was conducted amongst the above cited agencies, in the city of Culiacan, Sinaloa.

In Panama, a study of 12 settlements of the Agrarian Reform Commission was undertaken, paying particular attention to the collection of information to build up a social profile of the community. In El Salvador, the study on the organization of the Rural Colonization

Institute was completed, and in general terms, the study on 'campesino' community enterprises was begun for the whole of the Central American region, based on the FAO/IICA agreement to this effect.

Worth stressing in view of the excellent work being done at a Central American level, is the Training and Studies Program for Agrarian Reform and Rural Development of the Central American Isthmus (PRACA) which has been promoting agrarian reform in the area, with considerable support and success in El Salvador, Nicaragua and Costa Rica. Considerable impact was had on the Lands and Colonization Institute of Costa Rica (ITCO) with respect to a reorientation of the settlements sponsored by this institution.

PRACA has been working on training programs; the evaluation of the social effects of development programs; reciprocal training; basic cooperativism courses; national research courses; seminars, and others.

PRACA has been strongly supported by IICA and Project 206 of the Technical Cooperation Subsecretariat of the OAS, although its programs are mainly financed directly by the countries of the Isthmus.

### IICA Action in the Southern Zone

The work conducted in the Southern Zone under Line of Action VI was based on the following four projects: regulating the agrarian structure in Argentina; building the agrarian reform institutions of Chile; training and advisory services in agrarian reform and 'campesino' organization in Paraguay, and the strengthening of the National Institute for Colonization and Agrarian Reform in Brazil, although the latter project was not carried out.

The program's work with the above mentioned national projects, was carried out taking into account the fact that the agrarian reform process has not developed in a uniform manner in all the countries of the area, but differ appreciably not only in form, but also in agrarian reform concepts, and in the relative importance assigned the process within the respective agrarian policies.

Work has been accomplished in the training of personnel and advisory services have been provided on the application of elaboration techniques and the carrying out of agrarian reform projects. To a lesser degree, work was undertaken on the procedures to initiate new forms for 'campesino' business organization.

In Argentina, training was offered in the regulating of agrarian structures, including a course on the elaboration of special projects related to this area, and the corresponding in-service training to complement the coursework. Considerable impact was achieved thanks to the active participation of the national organisms. The original project orientation was modified for this country, adapting the methodology so as to utilize it as a



guideline for the distribution of large areas of land. Work initiated in this period, formed the preliminary step to an ambitious project called Colonization for National Reconstruction, for which IICA cooperation has been requested.

At the request of the national organisms, the program in Chile concentrated on training, research and advisory services related to the programming of productive resources of the reformed area, and on the designing of methods to control the progress achieved on expropriated projects and units.

In Paraguay, positive results were obtained with respect to inter-institutional coordination at the operative level, in the Eje Este colonies, and in the promotion of 'campesino' organizations with the

purpose of marketing products and inputs. At the request of the organisms involved, the agreement with IICA was renewed, extending the geographic area of action, and maintaining the same basic aspects of inter-institutional coordination, 'campesino' organization and the training of technical personnel.

### **IICA Action in the Antilles**

In both the Dominican Republic and in Haiti, IICA has worked on activities sponsored by the Project 206 on Technical Cooperation, with support action from IICA-CIRA. This work was carried out in the Dominican Republic through the important Integrated Program for Rural Development (PIDAGRO) and in Haiti, through the training of technical personnel.



## Chapter VII



**SPECIAL PROGRAMS**











## Chapter VII

### SPECIAL PROGRAMS



*It is absolutely essential to improve the diet in the tropical regions of America; vegetable crops offer good possibilities in this respect.*

#### Introduction

IICA regularly works on a number of activities within a given number of projects under the different programs within each institutional Line of Action. However, due to special circumstances and usually as a result of specific problems or situations at national as well as multinational levels, IICA has also undertaken certain very specific programs, not necessarily within one of the regular work programs, frequently as a result of the express resolution of the Board of Directors, or in answer to a special request by a country.

These projects or programs are usually financed through agreements with other international orga-

nizations, bilateral agreements with the governments concerned, IICA's own funds or specific grants or donations from governments outside of continental America.

The scope of IICA's action is certainly increased in this manner, enabling the institution to tackle relevant problems within the national or regional agricultural sector. Some of the programs are more important than others, and it would be impossible to detail them all in a report of this nature. However, a few of the programs are worth stressing in view of their importance and the substantial achievements to date. They are the following:

#### **a. The Irrigation Program for the Temperate Zone of South America**

There is a general awareness amongst those responsible for the development of agricultural activities in Latin America, although it varies from one country to another, that success in this area is very closely related to the best and most rational utilization of areas currently being irrigated, and those being prepared for this purpose.

This has been amply corroborated by papers and studies presented at different meetings, specifically the Latin American Seminars on Irrigation and Drainage held every two years since 1959. It has been concluded that although significant increases in agricultural production in unirrigated areas can be obtained through the incorporation of more advanced technology, they will not be as high in areas even with favorable rain frequency and intensity, as for areas under total or complementary irrigation, with the same technology.

It is well known that extensive areas of agricultural lands without irrigation in Latin America are somewhat marginal, and therefore production is very haphazard as a result of excessive or not enough rain. It is fairly common for the different governments to attempt to moderate these unfavorable circumstances by declaring emergency zones and extending credit deadlines.

As a logical result, the Latin American countries have been making efforts, whenever possible, to intensify their policies to develop irrigated agriculture. The Inter-American Development Bank (IDB) and the World Bank have contributed significantly to these efforts, through loans for the construction and rehabilitation of irrigation systems. Up to December 31, 1972, IDB loans benefited approximately 700,000 hectares in 10 countries, and World Bank loans were responsible for the conditioning of 1,500,000 hectares in five countries.

Experience over the two years of existence of the IICA Irrigation Program for the Temperate Zone of South America, indicates that much can be done, within the guidelines of the General Plan and in accordance with the recommendations of the Board of Directors, to collaborate with the countries to overcome the problems and limitations encountered in this area of work.

In a brief review of progress achieved with respect to the program's specific objectives, it can be seen that the majority of the activities have been oriented towards attaining the first objective, that is, a better utilization of existing irrigation systems, with the aim of increasing agricultural production and the employment of persons per unit area, as well as a more equitable distribution of the resulting profits.

To achieve this—which in no way implies ignoring the importance of the other objectives—the 4,154,000

hectares under irrigation in the five countries involved 50 per cent of total irrigated area in Latin America, as well as the requirements of organisms with which agreements had been signed, and the relatively scarce program resources available, had all to be taken into account.

The following accomplishments reflect the emphasis on as well as the progress achieved by this program: the first meeting of the Advisory Committee; the international interchange of technicians; the organization and offering of training courses in Argentina, Brazil, Chile, Peru and Uruguay with an attendance of 230 professionals; collaboration in other training courses on subjects related to irrigation, with an attendance of 112 professionals; advisory services provided on the formulation, revision and application of legal dispositions and rulings as well as on the technical and methodological aspects of conducting socio-economic and technical studies on diverse aspects of irrigated agriculture.

In relation to the progress outlined above, and taking the available means into account, as well as the importance of irrigated agriculture for the general development of the five countries involved, several indicators can be mentioned.

In Argentina, the assistance offered to one of the leading provinces on up-dating the legal dispositions and regulations for the utilization and distribution of irrigation waters has been gratefully acknowledged.

In Chile, considerable progress has been made on defining norms, methodologies and technical criteria for the Chilean institutions to comply with legal dispositions on the management and development of irrigated areas.

In Brazil, amongst other aspects, the importance of training professionals in the management and development of irrigated areas has been recognized. Similarly, the training of an appreciable number of technicians in irrigation systems has had a positive effect in Peru.

And finally, an agreement has been reached with the authorized representatives of the interested entities in Uruguay, on the urgent need to promote the establishment of an institutional sub-system to define and coordinate irrigation policies at a national level. Activities along this line are programmed for 1973/74.

#### **b. Cooperative Program for the Development of the American Tropics**

The Advisory Committee of the Cooperative Program for the Development of the American Tropics which met in Guayaquil, Ecuador in June, 1972, resolved that the program IICA-TROPICOS should consolidate its action for the 1972/73 fiscal year, on the following priority areas:

— Graduate training of personnel.

- Elaboration of specific projects in tropical ecology, forestry and animal and pastures production.
- Collaboration on the study for the colonization of the wet tropics of Latin America.
- Coordinate activities with national committees and the Advisory Committee.
- Provide advisory services to the Faculty of Agrarian Sciences in Para, and to other organisms in tropical areas.
- Develop a documentation and tropical agricultural information unit.

In every case, efforts are made to support work undertaken by the countries in the region, in conservation, land utilization and colonization, and to improve the general well being of man in the tropics.

Activities conducted throughout the year were in relation to the priorities outlined above. The program is forging strongly ahead, and its importance is increasingly recognized by the countries involved.

The following activities should be stressed in view of their importance:

In November 1972, a seminar on colonization systems was held in Belen, Para, sponsored by IICA, the Tropical Program, the Ministry of Agriculture and the Colonization and Agrarian Reform Institute of Brazil. The main objective of the seminar was related to the technical aspects of the colonization process. Valuable information and experience was interchanged, principally on planning methodology and the carrying out and coordination of the colonization program system for wet tropical forest areas.

In February 1973, the first technical meeting on tropical forest development programming was held in Medellin, Colombia. Plans and suggestions on policies, legislation, institutional, human and financial resources, and the social aspects of development projects underway or contemplated for the wet tropics were analyzed. In addition, various recommendations were made at the meeting, amongst which the following are worth mentioning: a request to activate and up-date legislation policies with respect to tropical wet forest resources; an urgent request to define forest work areas in the wet tropics; a request to keep the forest sector in mind when structuring development plans; a request to establish special fiscal incentives to promote investments in the development and recuperation of resources in the American tropics; and requests to stimulate the creation and development of national parks, to revise credit policies; and to revise and up-date higher forestry education programs.

From April 9 through 14, 1973, a meeting on the programming of ecological research for the American Tropics was held in Maracaibo, Venezuela, under the auspices of IICA-TROPICOS and the University of Zulia. Eighty-nine participants were present, as dele-

gates from national and international organizations or as official observers, from eight countries: Bolivia, Brazil, Costa Rica, Colombia, Chile, Ecuador, Peru and Venezuela. The main objective of the meeting was to structure a multinational program for applied research in tropical ecology.

The IV Meeting of the IICA-TROPICOS Advisory Committee was held in Lima from 21 to 26 May 1973, under the joint auspices of the Program itself and the Ministry of Agriculture of Peru. Delegates from the member nations involved in the program and representatives from IICA attended. The Advisory Committee analyzed the current situation, and evaluated the recommendations made by the country representatives and at the technical meetings organized by the Program. The proposal project for the Program-Budget submitted by the Executive Secretary was also considered, and the operative program for the 1973/74 fiscal period was elaborated. At the time, Mr. Eduardo Morán Bacigalupo, Director of the Ministry of Agriculture in Peru, stated: "It is precisely in the search for solutions to technological problems, that our countries can find ample scope to collaborate through joint and complementary actions oriented towards solving common problems."

Generally speaking, there has been a growing recognition in the countries involved concerning the importance and impact of the program and the multiple benefits derived, through research and training studies, and programming meetings to determine priority work areas.

Worthy of mention is the work undertaken by the information and agricultural documentation unit of IICA-TROPICOS for the excellent coverage in its trimestral information bulletin; the bibliographies on specific and related topics, and other documentation aspects which are much appreciated by those who need and use them.

#### c. The Inter-American Rural Youth Program

The rural youth program, financed by a Kellogg Foundation grant, has made substantial progress in its second year in its work to demonstrate that rural youth can contribute significantly to the rural development of Latin America, through an increase in food production and an improvement of the nutritional levels of rural communities.

The more outstanding benefits of the program have been the adopting of a basic methodology by the countries involved: Guatemala (4-S Clubs); Costa Rica (4-S Clubs); Venezuela (5-V Clubs); and Paraguay (4-C Clubs). In each program the rural youth is responding in a positive manner, and therefore not only improving conditions for themselves, but also for their families and the communities they live in.

Projects at the country level are basic to the rural youth programs. Each country is responsible for design-



ing and carrying out its project. The youths have been trained, but the risks involved in carrying out a project is theirs. However, they have proved to be worthy of the responsibility, even under adverse circumstances.

There has been increased recognition concerning the stimulating impact of the program. Two main factors dominated the work during the second year: a) increased priority for activities related to real economic problems; and b) greater availability of training and information materials.

The 4-H Clubs in the United States are participating more and more in the assistance offered to similar

programs in Latin America, and are emphasizing a more realistic and active participation.

Several national and international agencies have cooperated with the program. Worthy of note is the help provided by the Inter-American Centre for Agricultural Documentation and Information (IICA-CIDIA) which published the first bibliography on material for rural youth programs, in Spanish and Portuguese.

The Special Board of Directors Committee of the National 4-H Clubs Foundation of the United States met in Costa Rica, for the first time outside of the U.S., to revise and evaluate their program. In addition, the Inter-American Conference of Rural Youth Leaders was held in which the participants particularly emphasized the concept of food production and its utilization as an important way to activate rural youth potential.



*Irrigation technification is an important tool to help increase productivity in arid and semi-arid zones.*



*The future of the agricultural sector is in the hands of rural youth.*

#### d. The Hemispheric Agricultural Marketing Program

The Board of Directors of IICA, at the meeting held in San Salvador in May 1972, approved the initiation of a program for the marketing of agricultural products, on a hemispheric basis. The program would be based on the "Project for a Hemispheric Agricultural Marketing Program" presented by the Director General, as a result of resolution IICA/JD-740-26, approved at the meeting in Lima, in 1971.

The general objective of the program is to cooperate with the countries of Latin America in the technical aspects for developing efficient agricultural production and distribution systems, in accordance with the policies and plans for economic and social progress in each country.

To comply with this commitment with the member states, IICA has hired the services of a highly qualified specialist to direct the program from Costa Rica. Three other technicians work in the program, in Costa Rica, in the Southern Zone and in the Northern Zone; in addition, other IICA technicians devote some of their time to work in this area, especially in the Andean and Northern Zones. Further specialists will be added to the program as needed, to accomplish the established objectives.

One of the more important activities in the fiscal period covered by this report, was the Seminar on Program Evaluation which was held in San Jose, Costa Rica in April 1973, sponsored by IICA and the Agricultural Development Council. Specialists from 15 countries in America met to familiarize themselves with the principal problems of institutional coordination in the marketing sub-system of the different countries; critical areas in the marketing systems were identified; possible means of action were analyzed; and the type of program participation was also identified.

Another important activity of hemispheric scope can be added to the multiple country level actions being carried out: the Agricultural Marketing Round Table which emphasized producer-consumer relationships, which was held in Santiago, Chile. As the annual meetings of the Board of Directors and the Technical Advisory Council were also being held, high level specialists and country representatives were able to attend. Several important recommendations for the program emanated from this meeting.

#### e. Management Program for Development

The Governments of Latin America, which have decided to promote rural development and have formulated programs and projects to that end, have almost always had the unfortunate experience of finding achievements falling far below expectations, of higher costs and more time involved than expected. The low

relative effectiveness, the high relative costs and the excessive time spent in implementation have become a constant factor in rural programs and projects.

The problem cannot be reduced to a single cause nor are the causes easily controlled, in view of the predominance of outside factors influencing the entire process. There is no doubt, however, that weak management of programs and projects in the institutions of the rural sector is one of the causes of the problem. By management we mean the art and the science of trying to achieve predetermined objectives with organization and the use of given resources, with the greatest effectiveness, lowest cost and in the shortest time possible.

Echoing this real need of the countries, IICA has undertaken a special program on management for rural development, which was explained at the previous meeting of the Board of Directors. The Management Program brings together all the efforts of IICA in this field and is made up of: 1) a nucleus in San Jose, under the Office for Coordination in Costa Rica, the function of which is to develop methodologies and leadership functions, coordination, receipt, ordering and dissemination of information and initiatives (suggestions) and reconciling efforts; and 2) specialists in the Regional Offices and the countries, whose main function is to promote and incorporate management into the Institute's efforts in the countries, to test methodologies and keep the central nucleus in San Jose permanently informed.

The IICA staff in the Regional Offices and in the countries has carried out many activities in the field of management and public administration, particularly in the Andean Zone (Ecuador, Colombia and Venezuela). The central nucleus has begun its work with a program of research and assistance to the Costa Rican Agricultural Development Program and the institutions involved in it.

Research in Costa Rica was completed in April, 1973, as regards the development and application of methodologies for data gathering, discovering the causes of dysfunctions and proposing remedies. The joint application of the remedies with the Costa Rican officials will be carried out between May 1973 and March 1974, as will the training and transfer of methodologies developed for data collection and analysis.

The Management Program (central nucleus and Northern Zone) will soon begin research in Guatemala during this year. The methodologies developed in Costa Rica will be applied in Guatemala, where their usefulness will be tested under different circumstances.

It is important to recall that the methodologies developed to date have been directed to countries that have development plans in operation. The Program will attempt to adapt and develop methodologies for countries where there are no development plans. This is the

case of Bolivia, where it is expected that an adaptation of the methodologies developed in Costa Rica can be carried out this year, with the assistance and resources of the staff of the Andean Zone of IICA.

The results of the research in Costa Rica and Guatemala, which have development plans, will be useful for another type of service which the Management Program will be able to give the countries that are in the process of preparing development plans, such as Nicaragua. In view of the urgency of this country's needs, the central nucleus and the Northern Zone Office began their work in Nicaragua in April of this year. Assistance was also given to Panama in the restructuring of the agrarian sector, in November, 1972, and February, 1973.

It is felt that the methodologies for countries with development plans which were developed in Costa Rica and analyzed and adapted in Guatemala will have to be analyzed once again before being transferred to the IICA staff in the Latin American and Caribbean countries.

Thus, it is anticipated that a third trial can be carried out in Paraguay, with the assistance of the Southern Zone staff.

Within a few years, if the necessary resources are available to maintain the research and testing function of the central nucleus, all the technical assistance activities in the field of management will be carried out by the zones and countries. The central team will be reduced to the function of coordinating the activities, analyzing and disseminating the results and thus helping to enrich IICA's common pool of knowledge in the special field of management for the service of the countries.

#### **f. Regional Cooperative Program in Animal Husbandry and Pastures**

This Program, working principally in Bolivia, Ecuador and Peru, has completed an inventory revision of pastures research over the past ten years in the area. Based on progress achieved over this period, the future orientation for research has been discussed and defined, and refers principally to an integration of pastures research into a global context of animal production. The research should also be oriented towards economically benefitting 'campesino' communities and stimulating the

personal action of technicians with attitudes for social service. The national institutions involved have accepted these guidelines and incorporated them into their programs.

The Tropical Forage Germplasm Bank has been the most important link between the countries to achieve a solidarity of action in an area of considerable interest for the improvement of tropical pastures. Seed production and the interchange of material at regional levels have also been accomplished through Bank activities.

In Bolivia, Ecuador and Peru, efforts have been made to integrate the areas of specialization into a system for animal production, and to orient this production towards economic development. Production systems and development alternatives for small farmer communities were emphasized.

The program has been working with professionals from national organizations who are receptive to the new research orientations. Their current and past work indicate that IICA's action over the past few years has been able to increase the number and quality of national technicians involved.

For the 1973-1974 fiscal period, the Regional Cooperative Program for Animal Husbandry and Pastures will come under Line of Action IV, which will facilitate a closer relationship to the research program and its application to development. The specific objectives will be oriented towards supporting action in specific regions and organizations, to establish pilot development projects.

#### **g. IICA support to the Latin American Professional Associations**

This work is carried out through the Executive Secretariats of the associations such as the Latin American Plant Industry Association (ALAF); the Latin American Higher Agricultural Education Association (ALEAS); the Latin American Agricultural Graduate Education Association (ALEAP) and the Inter-American Association for Librarians and Agricultural Documentalists (AIBDA). Advisory services have been provided the secretariats, and IICA has worked in close collaboration with the associations.





## Chapter VIII



INFORMATION AND DOCUMENTATION











## CHAPTER VIII

### INFORMATION AND DOCUMENTATION



*Documentation is an important instrument for the planner, researcher or professor.*

#### **IICA–CIDIA Action**

Modern concepts on documentation started circulating around 1930 when the Belgian Paul Atlet began to spread them on a world-wide basis.

Until recently, the basic concept of documentation was limited to 'a series of documents to serve as a basis for action, and to be compiled'. Thanks to the growing specialization of documentalists and other communication experts, new interpretations have been added. Thus, in the fifties, there was already an international consensus as to the purposes of documentation: the gathering and putting in order and distributing of

documents related to human activities.

An additional step was taken by the outstanding English librarian Samuel Bradford, who defined the concepts on a more ample basis, when he observed that documentation consisted in a number of technicians brought together to compile, analyze and make rapidly accessible the results of intellectual activity in all fields of human sciences.

The Inter-American Centre for Agricultural Documentation and Information (IICA–CIDIA), temporarily situated in Turrialba, Costa Rica, has taken this concept and applied it to agricultural and related sciences, and is

carrying out impressive work in this field in Latin America.

Founded in 1946, the Horton Commemorative Library was restructured in 1970 as an agricultural documentation and information center, and currently has 10 international staff members which continue the actions initiated by IICA on the improvement of libraries, documentation and information centers in the field of agricultural sciences, as well as other activities in the field of personnel training.

The evolution of IICA's services and programs in the field of agricultural library and documentation sciences began in 1946 with the founding of the library, and has since continued as a leader in this field in Latin America, increasing the collections and expanding its functions and programs.

The restructuring of CIDIA resulted from the need to coordinate the elements needed to promote, stimulate and cooperate indirectly in the creation, development and consolidation of agricultural information units and their structures, in Latin American countries. This coordination organism was also established to handle the processing of large volumes of information and to apply new technology to their management as well as to coordinate activities to be carried out through cooperative agreements.

The operative structure of CIDIA is based on specialized documentation and information units: materials; and a printshop. CIDIA action also includes the library and documentation services, provided at IICA-CIRA (Inter-American Center for Agrarian Reform and Rural Development) in Bogota, Colombia.

CIDIA's programs are concentrated into three operative areas:

a. *Planning, development and coordination of documentation and agricultural information structures*

The main purposes of this program are to contribute to the creation, consolidation and strengthening of national structures in agricultural documentation and agricultural information. The more recent accomplishments in this area are as follows:

- The creation and implementation of the AGRINTER (Inter-American Information System for Agricultural Sciences) with CIDIA acting as coordinator. The basic documentation for the creation of this system was approved by the libraries and documentation centers of Latin America, in Turrialba, Costa Rica, in August 1972.

- The participation of CIDIA as the main input center from Latin America for the International Agricultural Information System (AGRIS) which was created by resolution at the Twelfth Regional Conference of FAO for Latin America, in Bogota, Colombia, in September 1972.
- The participation of CIDIA as an active member of the recently created International Net of Agricultural Libraries (AGLINET).
- The cooperation and participation of CIDIA in processing and publishing the 'Latin American Agricultural Bibliography, with automation methodology.

b. *Development of human resources*

Action in this area involves continuous training and education of librarians and documentalists. This work is carried out at five levels:

- Support and promotion of courses held in the Latin American countries.
- Inter-American courses held at CIDIA, in Turrialba.
- Support action to continuous educational processes, through seminars held at CIDIA.
- Holding technical meetings.
- Support provided the professional librarian and documentalist associations.

In addition to the training of librarians and documentalists, CIDIA also emphasizes educating those who utilize the information, offering multinational courses on aspects related to the utilization of literature in the agricultural sciences, and the promotion and development of these courses at a national level, at the higher agricultural education institutions. Research studies on the utilization of literature in this field have been conducted.

c. *Reproduction, analysis and transmission of information for development*

Action in this area involves cooperation with the Latin American countries on the integration of agricultural information in Latin America, so as to have literature produced in the agricultural sciences readily accessible to all the countries. The action also includes stimulating the utilization of this literature by all kinds of people: professors, students, political leaders, planning functionaries, field workers, etc.

Efforts are also made to promote the production and distribution of original literature in the hemisphere, in

the fields of biological and social sciences, facilitating their publication in journals and monographs.

Another area of importance is the contribution to the engendering of material in rural development for educational, research and extension purposes. Also of importance is the coordination of cooperative national and multinational projects on the production of bibliographic instruments, utilizing modern techniques.

CIDIA is very active in this field, offering direct advisory and informative services of a specialized nature, on the preparation of bibliographies, catalogs of periodic publications and other reference material of hemispheric scope.

The catalytic action of CIDIA has always held its main objective to be cooperation with the countries of Latin America in the development of their human

resources, at national and multinational levels, and on their agricultural information services. Support action is also provided on research into the application of new technologies; the development of professional associations, and the production of integrated agricultural information for the whole of Latin America. The list of CIDIA's action in these fields in each Member State is long, and indicative of the concern for the development of agricultural information and documentation on this continent. The reader will find a list of the activities in the corresponding appendix.

However, a little more information concerning the characteristics on the Inter-American Information System for Agricultural Sciences (AGRINTER) is of interest. AGRINTER, as already mentioned, was established at the IV Round Table of the Inter-American Development Program for Agricultural Libraries (PIBDA) in August, 1972. This coordinated system,



*More and better agricultural libraries in America: IICA-CIDIA's goal.*



open to the voluntary participation and cooperation of the countries in Latin America and the Caribbean, seeks to promote the integration of documentation and information services for the region.

National and international organisms, aware of the direct relationship and importance of information with the development of their countries, have taken politico-administrative and financial measures to organize and develop better information systems.

In Latin America, there are several countries which have taken firm steps to develop information systems. Colombia is in the process of establishing a National Information System (SNI) and a National Information Sub-System in Agricultural Sciences (SNIA). Brazil is studying the possibility of implementing a National System for Scientific and Technical Information and Documentation (SNICT) and an Information Sub-System for Agricultural Documentation (SIDA). In other countries, information systems are coming into being, thanks to the dedicated action of the National Science and Technology Councils such as CONICET of Argentina, CONICYT of Chile, CNI of Peru, and CONICYT of Venezuela.

IICA-CIDIA has been a leading pioneer in the development of these ideas, initiating IICA-PIBDA and promoting the creation of AGRINTER. Worthy of note are the efforts of AIBDA, BIREME, CLADES, OAS, FID/CLA, CINTERFOR, the Andrés Bello Agreement, and others.

AGRINTER's scope covers literature on agricultural and related sciences, and includes all kinds of documents, published or not, produced in or about South and Central America, Mexico and the Caribbean, without language limitations. To define the area of agricultural and related sciences, the categories from the Latin American Agricultural Bibliography were utilized. In the future, these categories will be adjusted to those adopted by AGRIS, the world-wide system.

AGRINTER has concentrated on the following aspects during its first year in operation:

- The study, analysis and defining of bases for the System.
- Ratifying the basic nuclei for cooperation and participation in the System.
- Promotional work at an inter-American level on the establishment of basic nuclei in countries as yet not represented in AGRINTER.
- Promotional work at national levels, to obtain the cooperation of libraries and agricultural documentation centers in the country, as cooperating member libraries of the basic nuclei.
- To determine and develop an adequate methodology to speed up the flow of information.

- Strengthening technical and economic aspects of the Latin American Agricultural Bibliography.
- Planning the Collective Catalog of Selected Periodic Publications, and the Bank of Agricultural Bibliographies on Latin America and the Caribbean.
- Obtaining the technical support of IDRC (to analyze the system for the Collective Catalog of Periodic Publications, and participation of Latin America and the Caribbean in AGRIS, through AGRINTER, for a five year period); of NAL (the designation of an information specialist for a two years period), and of FAO.
- Personnel training through the educational program of CIDIA.
- Promotion of information concerning the System, through news bulletins, round table discussions (V AGRINTER Round Table, August 1972), courses and seminars (I Seminar on Progress in Agricultural Documentation, August-September, 1972); meetings and congresses (II Meeting of Ecuadorian Librarians and Documentalists; VII Brazilian Congress on Library Science and Documentation; AIBDA meetings).

### **IICA Action in Public Information**

Parallel to CIDIA's action with respect to scientific and technical information *per se*, IICA conducts a vigorous public information campaign to reinforce the work being carried out on the dissemination of information concerning institutional action on a hemispheric basis. This action is the direct result of a specific request by the Advisory Commission and approved by the Board of Directors in November 1970, coming as it does within the outline presented in the General Plan.

Four information sub-systems have been defined within IICA: technical information; diagnostic information; internal information and public information. The four sub-systems complement one another and produce an accumulation of knowledge and information which flows to IICA's member states where it is processed, analyzed and converted into programs, projects and activities whose end result will be evaluated and analyzed, and returned again to the countries as new and up-dated information as part of the last step in the process: information provided to the institutional public of each member state, who in turn decides what can be utilized to help determine and carry out the national agrarian policies.

To this end, a Division of Public Information was established at the Executive Offices of IICA. The Division, under the leadership of a highly qualified specialist, has produced a Hemispheric program for Public Information which was approved at the Sixteenth Meeting of IICA directors held in Panama in November 1972, and has since been translated into public information policies and regulations for the Institute.

There are also regulations and policies governing publications supported by the General Publications Committee, whose Executive Secretary is the Head of the Public Information Division. To complete the institutional frame of reference for information actions of IICA, there are also regulations on the characteristics and requirements to be met by the Official Publication Series of IICA. This frame of reference provides the international professional personnel of IICA with the appropriate elements to develop means of transmitting acquired knowledge to benefit the member countries.

Successful work completed is not enough; it must be publicized. This is the responsibility of the Division of Public Information, and it is expected to be able to improve the development of these information processes, as well as projecting the institutional image.

Results are already evident. Informative material has increased considerably; information on IICA action has been publicized in widely distributed journals such as 'Americas' (article on agriculture, development and IICA, April 1973); the Official Document Series which helps divulge information pertinent to the Resolutions of the Board of Directors and the Technical Advisory Council, collaborating in this manner with the OAS Councils, specifically CIES, to make public resolutions taken in the sphere of rural development. A more extensive use of languages has been achieved; in some cases publications are issued in four languages. A minimum number of reprints has also been guaranteed, so as to be able to reach and benefit the institutional public with knowledge and information which can be fully utilized.

Every effort is being made to strengthen this line of action within IICA, since an adequate knowledge of the Institute's action is a *sine qua non* condition to ensure

maximum utilization of resources provided by the Member States.



*The studious youth of America gathers in its documentation centers.*

**TABLE 4. PUBLICATIONS DISTRIBUTION**

**Summary**

This table presents the number of institutions, by continents, that receive publications from IICA-CIDIA.

NUMBER OF INSTITUTIONS	COUNTRIES					TOTAL
	AMERICA	EUROPE	AFRICA	ASIA	OCEANIA	
	918	272	38	79	31	1,338

**TABLE 5. DISTRIBUTION OF SHORT BIBLIOGRAPHIES**

July 1972 – June 1973

<b>Countries</b>	<b>No. of Bibliographies dispatched</b>	<b>No. of References</b>
<b>AMERICA</b>		
Argentina	32	807
Bolivia	10	286
Brazil	20	418
Canada	1	35
Colombia	185	5,065
Costa Rica	42	1,012
Chile	1	47
Dominican Republic	2	51
Ecuador	101	2,726
El Salvador	1	20
Guatemala	2	319
Honduras	1	23
Mexico	33	865
Nicaragua	11	286
Panama	21	541
Peru	29	876
Trinidad–Tobago	1	28
United States	12	470
Venezuela	142	3,603
<b>AFRICA</b>		
Angola	3	51
<b>EUROPE</b>		
Belgium	1	27
England	6	160
France	2	64
Switzerland	6	56
<b>MIDDLE EAST</b>		
Turkey	1	45
<b>TOTAL</b>	<u>666</u>	<u>17,881</u>

# FINANCIAL SUMMARY







## Chapter IX

### FINANCIAL SUMMARY

As was explained in the 1972 Annual Report, during the period between July 1, 1972 and June 30, 1973, the IICA Accounting has been centralized in the Executive Offices and mechanized. All accounting and financial data are processed through the data processing unit assigned to the office of the Associate Deputy Director for Technical Affairs and Planning.

During the period covered by this report, the centralized system was strengthened, correcting minor irregularities and incorporating new Operations Analyses and Informative Reports.

At the present time, the IBM Programs that are processing and controlling the accounting and financial data, produce the following monthly reports:

1. A Financial Statement for each one of the Operating Units, indicating the status of the accounts, and for some accounts (Accounts Receivable, Advances on Expenses, etc.), a consolidated statement for all of IICA.
2. Also for each Operating Unit, a Budget Report by type of expenditure.
3. For each Regional Office and Center, a consolidated Budget Statement with a cross-reference for the operations in their respective jurisdictions in the following groups: Personnel Costs and Operational and General Services costs, then subtotaled to the level of Program and totaled by Lines of Action.
4. A consolidated Budget Statement for all of IICA, by Lines of Action, with details within each one of these costs corresponding to each Zone or Center.

These statements are published within the first five working days of each month. To be able to get up-to-date financial and budget reports, at any

moment, allows IICA's Operating Units to obtain more efficiency in the execution of planned activities.

With the experience of having the Centralized Accounting System in operation for two years, it can be said that the objectives originally outlined have been fully reached. Nevertheless, the Operations Analyses in force now, will continue for the purpose of further improving the Accounting System and incorporating additional Statistical Reports that permit greater administrative control.

During this fiscal period, the following tables have been elaborated, and are being produced by the Data Processing Unit.

1. Comparison between the positions and the number of persons included in the approved Operations Program, and the positions and number of persons employed for each Operating Unit of the IICA, not only for the International Professional Personnel but also for the Auxiliary National Personnel. This table is produced monthly.
2. Tables for each of the insurance policies in force, contain all the information about the insured Personnel, as well as additions, deletions and changes that may occur during the month.
3. In addition to the last table, a monthly list is also elaborated, detailing in alphabetical order, the insured personnel, with all the information relating to the insurances that each individual has.
4. For each of the Operating Units, a table is elaborated every three months with all the information relating to the insurances of the Personnel working in the respective offices.

## ANALYSIS OF THE FINANCIAL STATEMENTS

(For the Period ending June 30, 1973)

(Table 1)

### Cash in Banks

The cash position, as of June 30, 1973, was considerably better than the previous year due to increased quota payments, particularly for prior years. These reserves provide for approximately three months of operation during the new fiscal year, while new quota collection efforts are initiated.

Interest-earning deposits were rescheduled during July in order to gain the maximum from cash on hand.

### — Accounts Receivable — Quotas from Member States (Tables 2, 3, and 4 and Figure 1).

Quota collections for the fiscal year 1972-1973 totaled US\$5,150,698. Of this amount, US\$3,946,127 represented current quotas for 1972-73 and the remaining US\$1,204,571 were payments from prior years. On a percentage basis, collection of current quotas represented 79.2% of the current budget approved, and total collections amounted to 103.4% of the approved budget.

Excluding Cuba, seven countries were current as of June 30, 1973 and eight countries had made substantial payments to cancel overdue quotas. Five of these eight countries owed only the current year quota, or the current quota and a small balance of the prior year quota. Seven countries made no payments during the year.

In total, again excluding Cuba, quotas receivable amounted to US\$1,893,997 of which US\$1,035,543 were current quotas due, and the balance of US\$858,454 represent quotas due from prior years.

### Accounts Receivable

The total amount as of June 30, was reduced from the previous year's balance. Nearly the entire amount was due from contracts and agreements that IICA has with other organizations and government entities on a reimbursable basis for specific programs or projects. In

these cases, actual reimbursement, which is made on a periodic basis, had not been received by the closing date, June 30, 1973; however, the amount due does not represent doubtful payments, but rather a difference in the payment schedule as opposed to the closing date of the IICA fiscal year.

### Amortizable Investments

This amount represents the balance due on an original 10 year loan of US\$190,000 from the American Security and Trust Company for the construction of staff residences in Turrialba. Final payment on the loan is due in 1975. Payments against this loan are made through the deferred charges account. Over the past few years, because of the reduced staff in that center, rental income has not been sufficient to meet the entire payment; the difference has therefore been authorized from commercial operations income of the Center.

### Other Assets

This amount reflects balances from interoffice transfers, which are cleared early in the following fiscal period.

### Fixed Assets

The assets accounts of IICA do not reflect the value of its land, buildings, crops, vehicles and other properties, inasmuch as expenditures for the acquisition of such assets are considered as current, and charged against the budget for that period, and the corresponding liability is recorded. Certain construction and furniture costs, financed with loans, are deferred and amortized to the extent possible with income from the rental of residences, dormitories and furniture.

### Accounts Payable

This amount was reduced notably during the past year by keeping current on accounts payable, to prevent accumulating these liabilities.

### Third Party Funds

This account reflects advance payments on contributions from foundations, government entities or other

organizations for specific purposes agreed to by the Institute. Funds are expended as agreements are carried out.

## Reserves

A slight increase in reserves is reflected this year, due to increases in amounts normally assigned to CTEI from miscellaneous income.

## General Working Fund

During the fiscal year 1972-73 the General Working Fund increased from US\$2,802,884 to US\$3,041,986.

It is very important to point out that the composition of this fund is not all expendable cash. With the increase in quotas collected during the fiscal year reported, the liquidity of this fund in cash has increased in percentage over last year; however, as explained earlier in this report, that liquidity only covers expenditures for a period of approximately three months average expenditures, which is considered to be a minimum for reasonable operations during the new fiscal year, while new quota payments are being deposited.

Considering the new level of this fund, US\$3,041,986, it is pointed out that 29.5% of this total is represented in cash. The balance, as shown in Figure 2, is reflected in unpaid quotas, 62.3%, and accounts receivable, 8.2%.

A summary of income and disbursements appears in Table 6.

### — Cost Distribution by Line of Action— (Table 8; Figures 3, 4 and 5)

Table 8 shows annual expenditures charged to organizational units by Lines of Action, plus other general items according to the regular (Quota) program—budget approved by the Board of Directors.

Figure 4 demonstrates a gradual increase in the percentage of expenditures charged to Lines of Action, as compared to those for the Executive Offices, Administration, General Services, General Costs and Equipment and Capital Investments. This reflects the continued

efforts of IICA to channel its resources and efforts towards more services to the countries.

In accordance with the administrative policy of prior years, approved by the Board of Directors, IICA has planned its annual expenditures according to estimated cash income, based on several years of experience. For this reason, annual expenditures are always maintained at a level less than the approved budget, in order to avoid a cash deficit at the end of the year.

Increased collection efforts, resulting in increased cash income during the past year, together with planned expenditures, enabled the Institute to maintain its operations on a cash basis, and re-establish adequate cash reserves.

### — Funds Received for Specific Purposes— (Tables 9 and 10, and Apendices)

The expenditure plan for funds received through Contracts, Donations, Contributions and other Special Agreements with IICA, does not always coincide with IICA's fiscal year. For purposes of this report, the movement of such funds is presented in such a way in Table 9, so as to coincide with IICA's fiscal year in order to facilitate analyses on a fiscal year basis.

Table 10 presents a consolidated statement of the movement of all funds for fiscal year 1972-73 in comparison with the 1971-72 fiscal period.

## General Comments

In spite of the increase in quota payments during the past year, quota collections are still behind. IICA has therefore been forced to curtail certain services to the countries, as in past years, in order to maintain its operations on a sound financial basis.

As cash flow in the Institute's operations—mainly through quota payments—is not consistent, even though the total amount received is adequate to finance a restricted operation, the Institute is faced with difficult periods when cash available is not sufficient to meet all the needs of the organization. This sometimes can result in the postponement of planned services, or in the cancellation of such services, under certain circumstances.

TABLE 6. Quota Funds. Financial Statement as of 30 June 1973 compared with statement as of 30 June 1972.

(UNITED STATES DOLLARS)					
ASSETS	30.6.73	30.6.72	LIABILITIES	30.6.73	30.6.72
Cash on Hand and in Banks	1,433,507	329,536	Loans Payable	57,000	76,000
Short-term deposits		400,000	Accounts Payable	4,512	19,882
Quotas Receivable					
Member States	1,893,997	2,063,025	Third Party Funds	60,018	65,642
Accounts Receivable	230,166	251,450			
Inventories	147,124	89,143	Rotating Funds	589,790	224,461
Prepaid Expenses	40,939	27,276	Reserves	62,264	50,562
Deferred Charges		9,908			
Amortizable Investments	57,000	76,000	SUB-TOTAL	773,584	436,547
			Funds and Donations Received for Specific Purposes	317	25,010
Other Assets	13,154	18,103	General Working Fund	3,041,986	2,802,884
	<u>3,815,887</u>	<u>3,264,441</u>		<u>3,815,887</u>	<u>3,264,441</u>

TABLE 7. Quota Movement of Member States for fiscal year ending 30 June 1973.

(UNITED STATES DOLLARS)						
Member States	Quotas receiv- able 6.30.72	Quotas for the year 1972-73	Total owed 1.7.72	Total collec- tions 1972-73	Total owed as of 6.30.73	Increase (decrease) of balance owed between 6.30.72 & 6.30.73
Argentina	316,630	340,474	657,104	316,630	340,474	23,844
Bolivia	75,415	15,982	91,397		91,397	15,982
Brazil	706,606	320,617	1,027,223	535,810	491,413	(215,193)
Canada**		192,112	192,112	192,112		
Colombia	73,169	76,038	149,207	69,614	79,593	6,424
Costa Rica	16,355	15,982	32,337	15,796	16,541	186
Chile	206,619	80,397	287,016		287,016	80,397
Ecuador	30,429	15,982	46,411	25,015	21,396	(9,033)
El Salvador	28,314	15,982	44,296	6,532	37,764	9,450
Dominican Republic	84,478	15,982	100,460		100,460	15,982
Guatemala		20,341	20,341	21,968	(1,627)*	(1,627)
Haiti	107,620	15,982	123,602		123,602	15,982
Honduras	1,104	15,982	17,086		17,086	15,982
Jamaica***		10,332	10,332	10,332		
Mexico		352,582	352,582	352,582		
Nicaragua	15,091	15,983	31,074		31,074	15,983
Panama	15,249	15,983	31,232	23,232	8,000	(7,249)
Paraguay	82,410	15,983	98,393		98,393	15,983
Peru	66,691	39,714	106,405	37,224	69,181	2,490
United States		3,196,483	3,196,483	3,196,483		
Uruguay	91,536	28,090	119,626	37,392	82,234	(9,302)
Venezuela	145,309	164,667	309,976	309,976		(145,309)
SUB-TOTAL	2,063,025	4,981,670	7,044,695	5,150,698	1,893,997	(169,028)
Cuba	474,235	63,930	538,165		538,165	63,930
TOTAL	2,537,260	5,045,600	7,582,860	5,150,698	2,432,162	(105,098)

\* The amount corresponds to an advance for 1973-74

\*\* Became a member on December 1, 1972 - quota is for 6 months

\*\*\* Became a member on November 1, 1972 - quota is for 8 months.



**TABLE 8. Status of Quotas. Comparison between periods ending 30 June 1972 and 30 June 1973.**

SITUATION AS OF 30/6/72		SITUATION AS OF 30/6/73	
Prior year quotas	1,538,829		2,063,025
Current quotas	4,425,209		4,981,670
Total due	5,964,038		7,044,695
<b>Payment received during the year:</b>			
a) For prior years	584,108 (38.0%)		1,204,571 (58.4%)
b) For the current period	3,316,905 (75.0%)	3,901,013 (65.4%)	3,946,127 (79.2%)
			5,150,698 (93.1%)

**Percentage of Collections in relation with Budget Approved by the Board of Directors**

SITUATION AS OF 30/6/72	SITUATION AS OF 30/6/73
a) Quota collections for the 1971–1972 period represented 75% of the approved budget.	a) Quota collection for the 1972–1973 period represented 79.2% of the approved budget.
b) Total quota collections (both prior years and for the current period) represented 88.1% of the approved budget.	b) Total quota collections (both prior years and for the current period) represented 103.4% of the approved budget.

NOTE: The figures and percentages shown in this table do not include the quota for CUBA, either as regarding quotas assigned for each period, or balances outstanding at the end of same.

**TABLE 9. Comparison of Quota Budget with Collections for the Years 1968–69 through 1972–73.**

Year	Quotas for the year*	Total collections for the year	Percentage
1968–1969	3,305	3,504	106.0
1969–1970	3,624	3,559	98.2
1970–1971	4,023	3,780	94.0
1971–1972	4,425	3,901	88.1
1972–1973	4,982	5,151	103.4

\* Does not include quotas chargeable to Cuba.

Millions, US\$

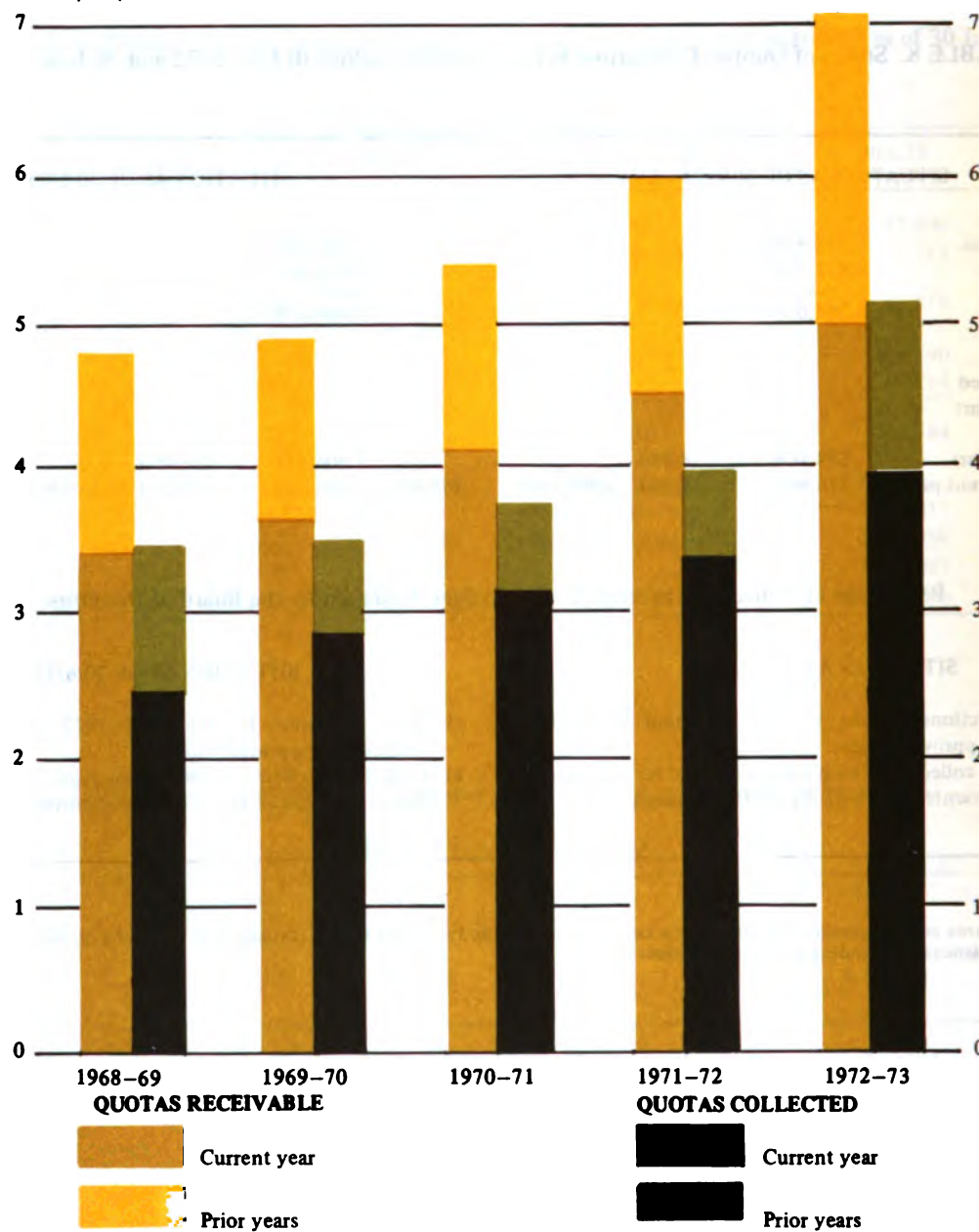
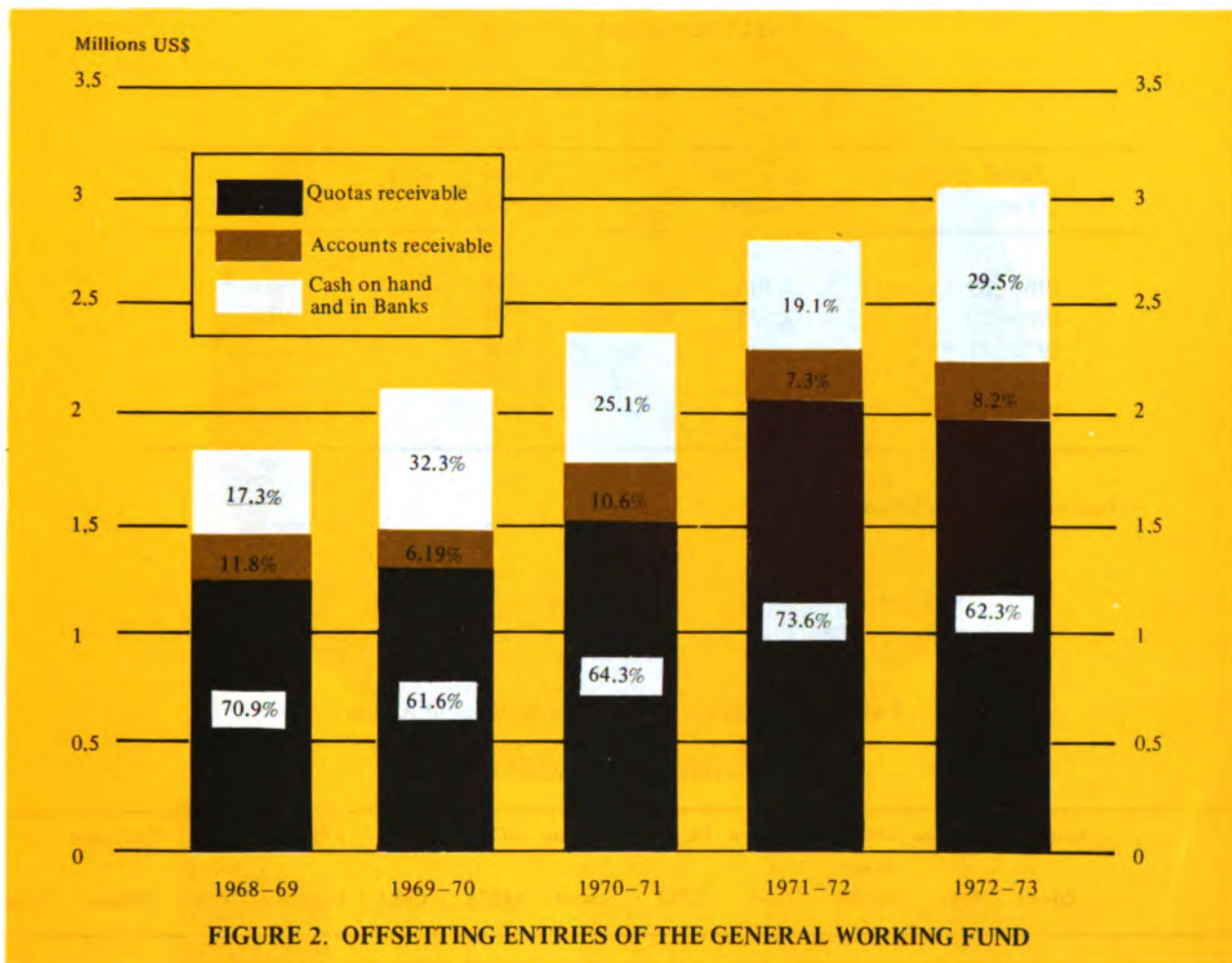


FIGURE 1. QUOTAS FROM MEMBER COUNTRIES

TABLE 10. Statement of the General Working Fund  
(UNITED STATES DOLLARS)

Balances at the beginning of the year		
Quotas Receivable	2,063,025	
Other balances	<u>739,859</u>	2,802,884
Refund to the General Working Fund		65,000
Surplus of income over expenditures for the year		
Income	775,966	
Disbursements	<u>(601,864)</u>	<u>174,102</u>
Balances at the end of the year		
Quotas Receivable	1,893,997	
Other balances	<u>1,147,989</u>	<u>3,041,986</u>



**TABLE 11. Summary of Income and Disbursements of the General Working Fund – 1 July 1972 – 30 June 1973.**  
(UNITED STATES DOLLARS)

INCOME		DISBURSEMENTS	
Quotas from Member States	4,779,226	Expense Budget	
New Member States	202,444	Line of Action I	489,605
Reimbursement of Administrative Expenses on Agreements	14,503	Line of Action II	915,925
AID Overhead Reimbursement	166,837	Line of Action III	641,349
Surplus of Income over Disbursements on Commercial Transactions	195,613	Line of Action IV	396,735
Miscellaneous Items – CTEI	14,565	Line of Action V	44,528
		Line of Action VI	285,275
		Line of Action VII	427,134
		Other Activities and Services Management, Administration and General Services	925,367
		General Costs and Provisions	172,813
		Equipment (Investments)	27,177
			<u>4,597,222</u>
		Use of Surplus of Income on Commercial Transactions and Miscellaneous Items – CTEI	210,178
		Use of Reimbursement of Administrative Expenses on Agreements	14,503
		Special Disbursements pursuant to Resolutions of the Board of Directors	51,727
		Transfers to Rotating Funds	208,837
		Agricultural Marketing Program	116,619
		<b>TOTAL DISBURSEMENTS</b>	<u>5,199,086</u>
		Transferred to the General Working Fund	174,102
<b>TOTAL INCOME</b>	<u>5,373,188</u>		<u>5,373,188</u>

**TABLE 12. Budget Execution**

(IN THOUSANDS OF DOLLARS)

Fiscal Year	Approved Budget*	Actual Expenses	Percentage
1968-69	3,305	3,126	94.6
1969-70	3,624	3,330	91.9
1970-71	4,023	3,849	95.7
1971-72	4,425	4,086	92.3
1972-73	4,982	4,597	92.3

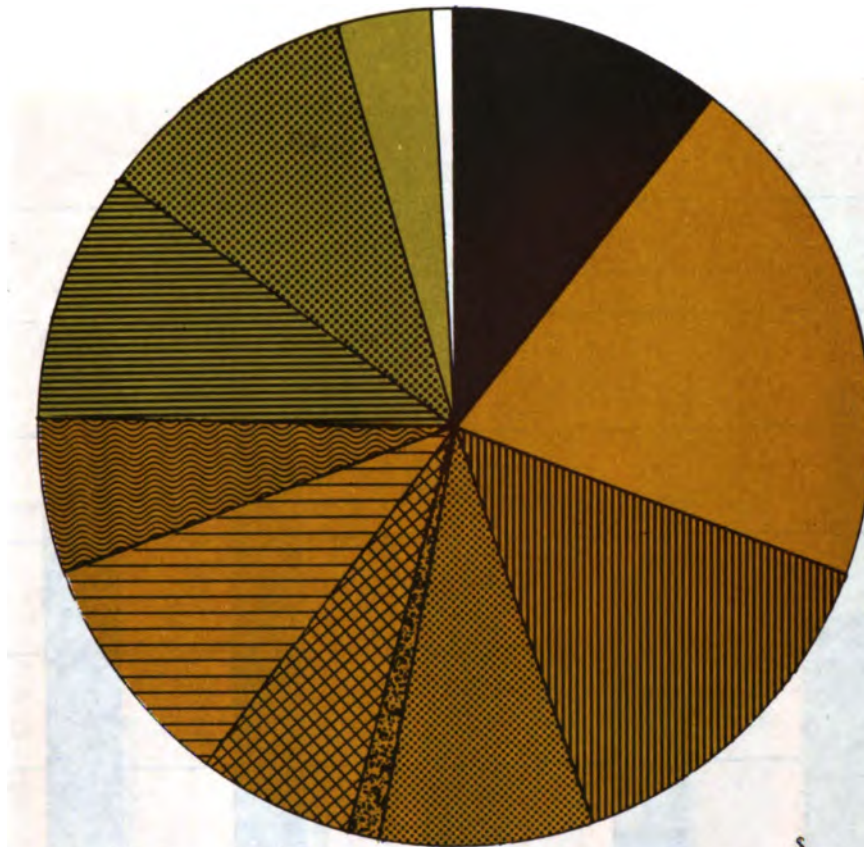
\* Does not include the Cuban quota.








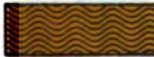



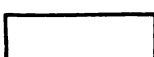
**TABLE 13. Expense Distribution by Lines of Action**

(UNITED STATES DOLLARS)

	Andean Zone	Northern Zone	Office in the Antilles	Southern Zone	IICA-CTEI	Graduate School	IICA-CIDIA	IICA-CIRA	External Coordin.	Tech. Asst. & Plan	Executive Offices	Total
Line of Action I	51,363	65,281	11,578	93,945	10,177		177,133	13,664		664,64		489,605
Line of Action II	173,805	153,180	27,071	296,090	180,061	42,135		43,583				915,925
Line of Action III	157,850	89,607	16,738	101,080	275,874							641,349
Line of Action IV	57,308	54,868	15,614	204,588	56,869					7,488		396,735
Line of Action V	12,276	20,478		11,774								44,528
Line of Action VI	58,407	124,466	13,461	57,612				31,309				285,275
Line of Action VII	131,906	79,020		156,730				13,844		45,634		427,134
Other Activities and Services	4,346	7,985		3,721			27,041	2,781	136,080	89,360		271,314
Management, Administration and General Services	95,547	84,308		110,194	99,027		23,205	36,901			476,185	925,367
Equipment (investments)	2,655	14,642	1,942	3,409	2,632	1,897						27,177
<b>SUB TOTAL</b>	<b>745,403</b>	<b>694,035</b>	<b>86,424</b>	<b>1,039,143</b>	<b>624,640</b>	<b>44,032</b>	<b>227,379</b>	<b>142,082</b>	<b>136,080</b>	<b>208,946</b>	<b>476,185</b>	<b>4,424,409</b>
General Costs & Provisions*	38,192	34,390	3,111	48,560	31,279		10,714	6,567				172,813
<b>TOTAL</b>	<b>783,655</b>	<b>728,425</b>	<b>89,535</b>	<b>1,087,703</b>	<b>655,919</b>	<b>44,032</b>	<b>238,093</b>	<b>148,649</b>	<b>136,080</b>	<b>208,946</b>	<b>476,185</b>	<b>4,597,222</b>

\* Expenses distributed on the basis of percentages as indicated in the 1972-73 Program-Budget.



	\$	%
 Line of Action I	489,605	10.65
 Line of Action II	915,925	19.92
 Line of Action III	641,349	13.95
 Line of Action IV	396,735	8.63
 Line of Action V	44,528	0.97
 Line of Action VI	285,275	6.21
 Line of Action VII	427,134	9.29
 Other Activities and Services	271,314	5.90
 Management, Administration & General Services Operative Units	449,182	9.77
 Management, Administration & General Services Executive Offices	476,185	10.36
 General Costs and Previsions	172,813	3.76
 Equipment (Investments)	27,177	0.59
<b>TOTAL</b>	<b>4,597,222</b>	<b>100 %</b>

**FIGURE 3. QUOTA BUDGET EXPENSES**



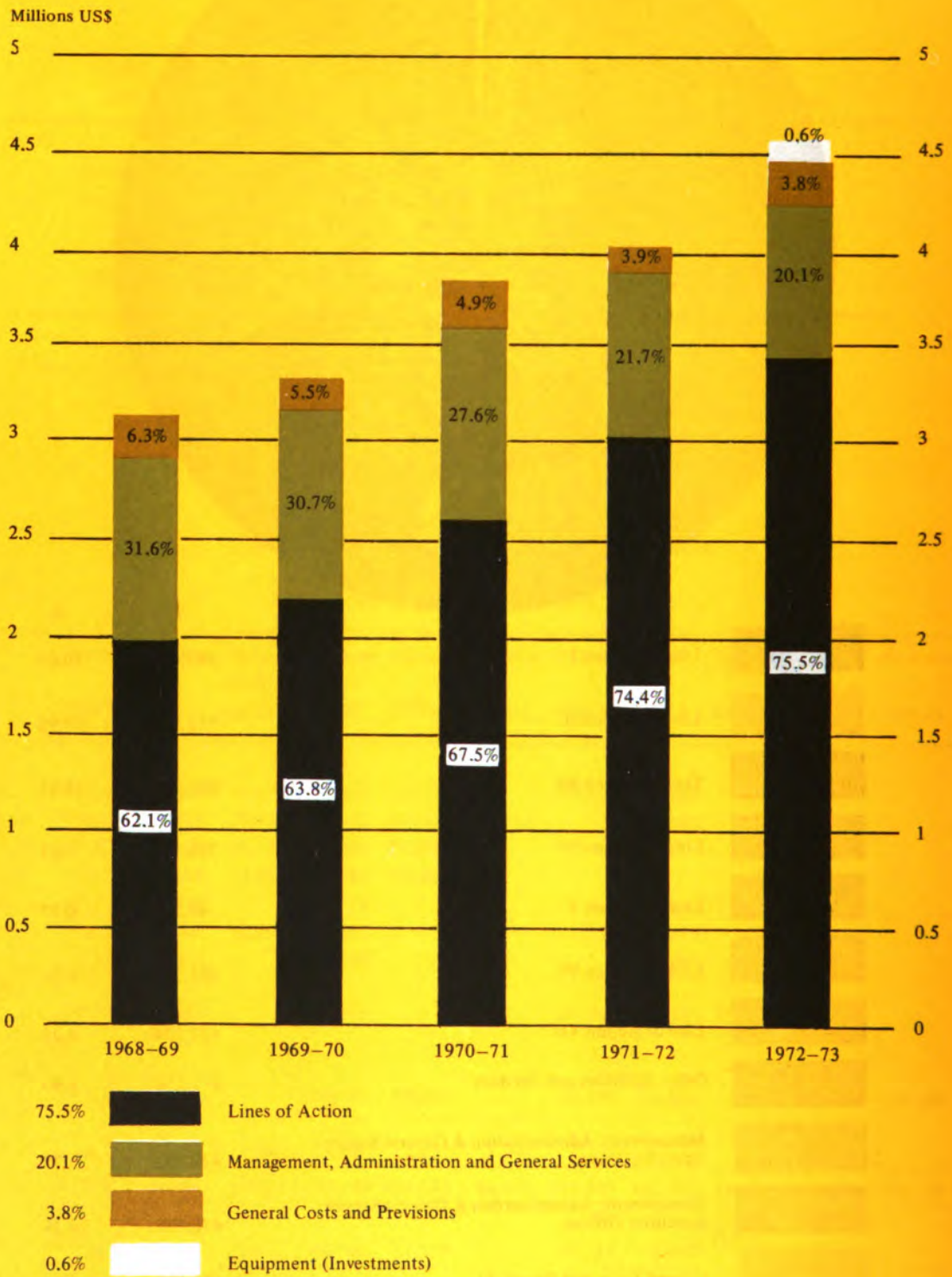


FIGURE 4. QUOTA BUDGET EXPENSES

Millions US\$

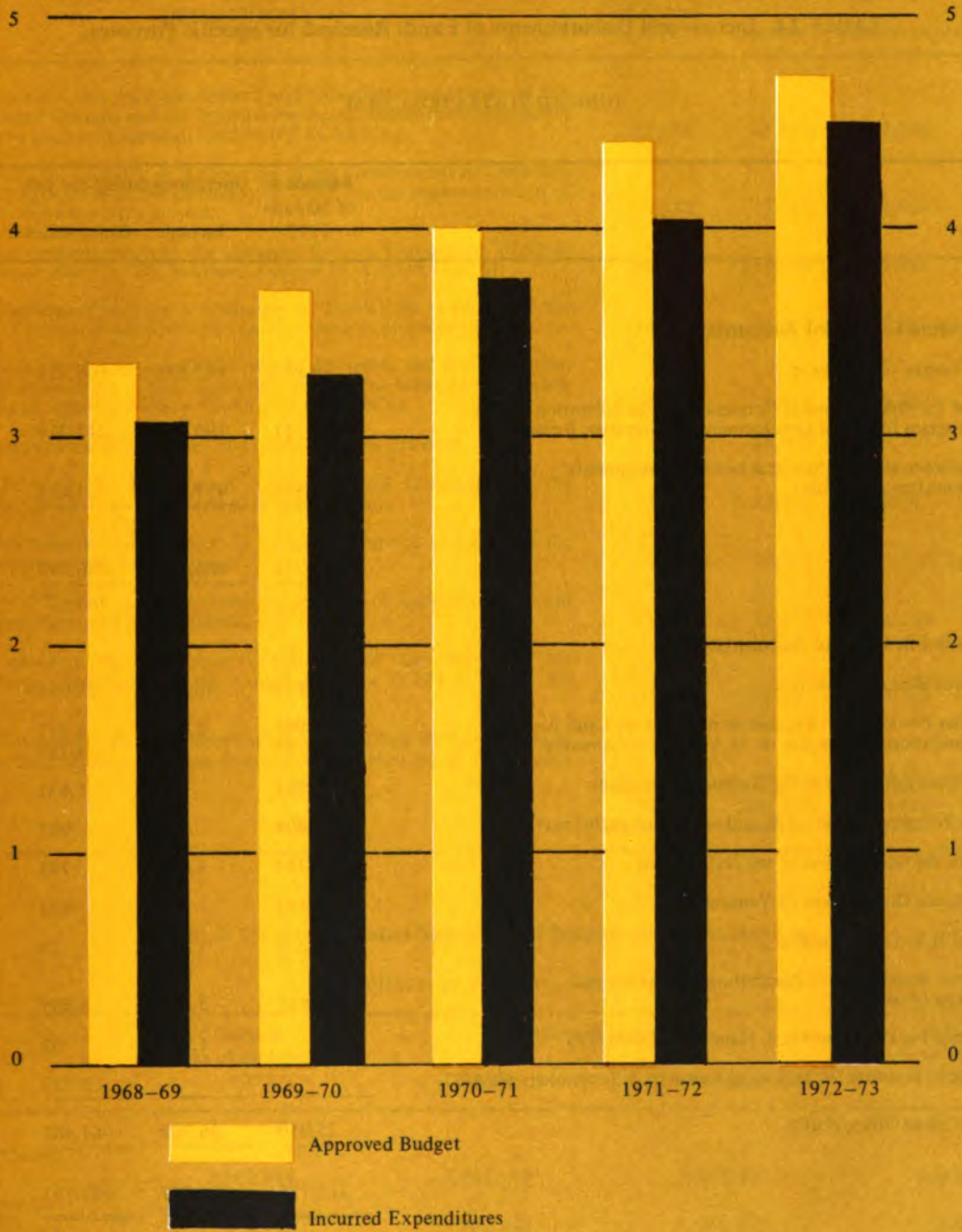


FIGURE 5. PROGRAM BUDGET EXECUTION

**TABLE 14. Income and Disbursements of Funds Received for Specific Purposes.**

(UNITED STATES DOLLARS)

	Balance as of 30 June 1972	Operations during the year		Balance as of 30 June 1973
		Income	Disbursements	
<b>Funds Deposited in Special Accounts:</b>				
U.S. Atomic Energy Commission	( 59,589)	175,875	108,385	7,901
Project 206 of the OAS Technical Cooperation Administration –Inter– American Program for Rural Development and Agrarian Reform	56,747	190,800	243,259	4,288
Agreement between the Institute and various Governments and institutions (see Appendix)	193,557	497,480	534,668	156,369
<b>SUB–TOTAL</b>	<u>190,715</u>	<u>864,155</u>	<u>886,312</u>	<u>168,558</u>
<b>Funds Included in General Accounts:</b>				
American Cocoa Research Institute	( 4,559)	26,867	29,095	( 6,787)
The Rockefeller Foundation–Promotion of ALAF in Latin America	2,999	2,500	6,277	( 778)
The Ford Foundation–Promotion of ALAF in Latin America	4,793		4,793	
Council on Higher Education in the American Republics	6,954		1,631	5,323
Co–operative Program for the study and control of coffee rust	1,808		987	821
Donation from the Government of the Netherlands	764	1,168	793	1,139
Donation from the Government of Venezuela	1,141		434	707
Dow Chemical N.V. Latin America	299		27	202
Inter–American Association of Agricultural Librarians and Documentalists (AIBDA)	10,881	5,257	8,535	7,603
National Council for Development & Planning (CONADEP)		1,000	83	917
Central American Institute for Industrial Research & Technology (ICAITI)			5,723	( 5,723)
International Coffee Office (OIC)	25,010	36,792	61,485	317
<b>TOTAL</b>	<u>215,725</u>	<u>900,947</u>	<u>947,797</u>	<u>148,875</u>

**TABLE 14. (Appendix). Income and Disbursements for Agreements with Governments and Institutions.**

(UNITED STATES DOLLARS)

DESCRIPTION	Balance as of 30 June 1972	Operations during the year		Balance as of 30 June 1973
		Income	Disbursements	
Agreement between the Agrarian Reform and Colonization Agencies of the Central American Isthmus and the Institute on the establishment of a program for training and studies in Agrarian Reform (PRACA/IICA).	12,084	35,250	32,036	15,298
Agreement with the Ministry of Agriculture of the Government of Chile and the School of Agronomy of the University of Chile, for the implementation of the Maipu Development Area project.	4,352	2,244	6,834	( 238)
Operational Agreement between the Agrarian Reform Corporation of Chile and the Regional Office for the Southern Zone of IICA (CORA/IICA).	50,613	119,854	156,998	13,469
Operational Agreement between the Ministry of Agriculture of Chile and the Institute for a technical advisory and teaching services program (SAG/IICA).	14,795	3,243	15,861	2,177
Agreement between the National University of Colombia and the Colombian Agrarian Reform Institute to enter into relations with the Institute with a view to establishing an Agrarian Reform Center (INCORA/IICA).	( 5,817)	55,841	51,501	( 1,477)
Agreement between the Government of Ecuador and the Institute.	881	40,909	35,747	6,043
Agreement between the Ministry of Agriculture and Livestock and the Ministry of Public Works of Venezuela with the Institute.	16,284	12,656	28,967	( 27)
Agreement between the Government of Colombia and the Institute on the National Agricultural Training Program.	2,925	50,232	51,855	1,302
Memorandum of Understanding between the Ministry of Agriculture of Brazil and the Director General of the Institute.	21,808	28,713	41,524	8,997
Agreement between the Executive Committee of the Plan for the Economic-Rural Recovery of the Cocoa Industry (CEPLAC) and the Institute.	75,632	70,957	77,285	69,304
Agreement between the Federal Government of Brazil and IICA on technical assistance to the Irrigation Training Program of the Ministry of the Interior (MINTER)		48,804	30,147	18,657
	<u>193,557</u>	<u>497,480</u>	<u>534,668</u>	<u>156,369</u>

**TABLE 15. Consolidated Statement of Income and Disbursements**

(UNITED STATES DOLLARS)

	Balance as of 30 June 1972	Operations during the year		Balance as of 30 June 1973
		Income	Disbursements	
Funds from Quotas and others	2,802,884	5,438,188*	5,199,086	3,041,986
Funds received for specific purposes	215,725	900,947	947,797	168,875
	<u>3,018,609</u>	<u>6,339,135</u>	<u>6,146,888</u>	<u>3,210,861</u>

\* Includes US\$65,000 from the Program-Budget.

*SUMMARY OF THE REPORT BY PRICE WATERHOUSE & CO.  
ON THE FINANCIAL STATEMENTS OF IICA*

*We have examined the accompanying financial statements (Exhibits 1 through 8) of the Inter-American Institute of Agricultural Sciences for the year ended June 30, 1973. Our examination was made in accordance with generally accepted auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. In accordance with the instructions of the Director General of the Institute, we did not request direct confirmation from the Member States of the uncollected quotas as at June 30, 1973; however, we were able to satisfy ourselves as to the amounts of these quotas by other auditing procedures.*

*In our opinion, subject to the matters mentioned in the preceding paragraphs, the accompanying financial statements present fairly the assets and liabilities of the Inter-American Institute of Agricultural Sciences as at June 30, 1973 and the results of its operations for the year then ended, in accordance with the accounting principles explained in Note 1 which were applied on a basis consistent with that of the preceding year.*

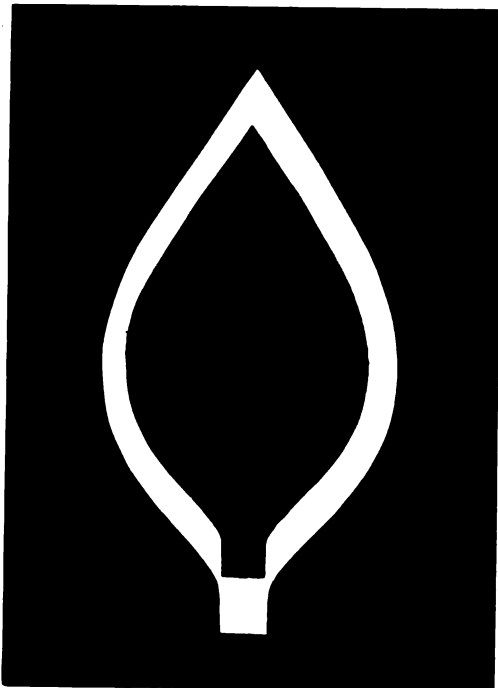
*Price Waterhouse & Co.*



# APPENDICES







## Appendix I

# IICA'S ACTIVITIES DURING THE 1972-73 PERIOD

The activities described in the following list and which appear in Table 16 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 at 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 considerably greater than the total for last year (787 activities within the Lines of Action in the Member States, as compared to 715 for last year).

**TABLE 16. Summary of IICA Activities Carried out by Lines of Action and by Countries**

	LINES OF ACTION							Total per country	
	I	II	III	IV	V	VI	VII		
Argentina	5	23	7	9	—	4	3	51	
Bolivia	1	5	2	1	—	5	2	16	
Brazil	12	14	8	22	—	—	10	66	
Colombia	19	5	2	7	1	14	26	74	
Costa Rica	61	42	112	14	1	5	6	241	
Chile	2	14	6	9	—	8	—	39	
Dominican Republic	—	2	2	2	—	2	—	8	
Ecuador	3	1	—	2	—	—	1	7	
El Salvador	2	—	2	5	—	3	—	12	
Guatemala	11	7	5	2	2	3	3	33	
Haití	1	1	1	3	—	—	—	6	
Honduras	2	2	1	1	—	—	5	11	
Jamaica	—	—	—	1	—	—	—	1	
México	10	11	4	3	—	5	1	34	
Nicaragua	—	3	—	2	—	3	3	11	
Panamá	1	1	2	3	—	7	2	16	
Paraguay	3	6	4	2	—	6	3	24	
Perú	5	9	1	7	—	3	3	28	
United States	3	—	1	2	—	—	1	7	
Uruguay	7	3	7	6	—	—	5	28	
Venezuela	6	12	2	1	1	5	1	28	
Multinational Activities	6	8	11	2	3	7	2	39	
Activities Carried in Countries outside the Area								7	
<b>TOTALS</b>	<b>160</b>	<b>169</b>	<b>180</b>	<b>106</b>	<b>8</b>	<b>80</b>	<b>77</b>	<b>780</b>	<b>787</b>

## ARGENTINA

### Line I. Analysis and Information on Rural Development

1. Analysis of the current Situation and Tendencies in Agricultural Development in Argentina (1 July 1972 through 30 June 1973) — Activity I. S. 121.
2. Coordination and Advisory Services to the Documentation Center for Research and Higher Agricultural Education (CEDIE) (3 January, Buenos Aires) — Activity I. D. 123.
3. Up-dating the Directory of Research Institutions in the Southern Zone (January, 1973, Buenos Aires) — Activity I. S. 231.

4. Up-dating the Directory of Higher Agricultural Education Institutions in the Southern Zone (February, 1973, Buenos Aires) — Activity I. S. 232.

5. In-service Training in Agricultural Scientific Documentation (May-June, 1973, Buenos Aires).

### Line II. Agricultural Education

1. Planning and Support to the Coordination of Postgraduate Education (1 July 1972 through 30 June 1973, Buenos Aires) — Activity II.S.111.
2. Administration of the Agricultural Sciences Graduate School, Argentina (1 July 1972 through 30 June 1973, Buenos Aires) — Activity II.S.121.

3. Support to the Graduate Courses in Argentina (1 July 1972 through 30 June 1973, Castelar) – Activity II.S.122.
4. Coordination of Graduate Education in Argentina with the Graduate Education being developed in Other Countries in the Southern Zone (1 July 1972 through 30 June, 1973, Buenos Aires) – Activity II.S.123.
5. Preliminary Study on the Demand for Highly Qualified Technical Personnel in the Agricultural Sector of Argentina (1 July 1972 through 30 June 1973, Buenos Aires) – Activity II.S.126.
6. Coordination of Graduate Education with the Other Countries of the Southern Zone (1 July 1972 through 30 June 1973, Buenos Aires) – Activity II.S.138.
7. Planning and Support to the Coordination of University level Education (1 July 1972 through 30 June 1973) – Activity II.S.211.
8. International Technical Meeting on University–level Veterinary Sciences Education (March 1973, La Plata) – Activity II.S.214.
9. Support to the ALEAS Secretariat (1 July 1972 through 30 June 1973, Buenos Aires) – Activity II.S.215.
10. Support to the University Association Secretariat (1 July 1972 through 30 June 1973, Buenos Aires) – Activity II.S.221.
11. Improvement in the Teaching Capacity of Professors (1 July 1972 through 30 June 1973, La Plata) – Activity II.S.222.
12. Coordination of Activities in Argentina with those in other countries of the Southern Zone (1 July 1972 through 30 June 1973) – Activity II.S.225.
13. Advisory Services provided Higher Agricultural Education Institutions in Argentina (1 July 1972 through 30 June 1973, Buenos Aires) – Activity II.S.226.
14. Academic Up–grading of Teaching Staff (1 July 1972 through 30 June 1973, Buenos Aires) – Activity II.S.232.
15. International Advisory Services provided Higher Agricultural Education Institutions in Brazil and the Coordination of Activities in Brazil with those of other countries in the Southern Zone (1 July 1972 through 30 June 1973, Buenos Aires) – Activity 235.
16. Coordination of Activities in Chile with those in other countries of the Southern Zone (1 July 1972 through 30 June 1973, Buenos Aires) – Activity II.S.245.
17. Coordination of Activities in Paraguay with those in other countries of the Southern Zone (1 July 1972 through 30 June 1973, Buenos Aires) – Activity II.S.254.
18. Advisory Services provided the Faculty of Agronomy and Veterinary Sciences of the National University of Asuncion (1 July 1972 through 30 June, 1973, Buenos Aires) – Activity II.S.255.
19. Interchange of Teaching Staff (1 July 1972 through 30 June 1973, Buenos Aires) – Activity II.S.257.
20. Coordination of Activities in Uruguay with those in other countries of the Southern Zone (1 July 1972 through 30 June 1973, Buenos Aires) – Activity II.S.264.
21. Publication of the Graduate Courses in Agricultural Sciences in the Southern Zone (February 1973, Buenos Aires).
22. Human Resources in Higher Agricultural Education in the Southern Zone (1 July 1972 through 30 June 1973).
23. Publication on the Education of Veterinary Sciences in the Southern Zone (1 July 1972 through 30 June 1973, Buenos Aires).

### Line III. Agricultural Research

1. Inventory of Programs underway in one of the principal Socio–economic Research Institutions of Argentina (5 March through 5 May 1973) – Activity III.S.311.
2. Forage Seed Evaluation (March 1972 through May 1973, Buenos Aires) – Activity III.S.242.
3. III Meeting of Agrostologists and Animal Husbandmen of the High Andes (Sheep and Cameloids) (8- 14 June 1973, July) – Activity III.A.411.
4. Evaluation of Regional Forage Varieties (November 1972, Balcarce).
5. Animal Science and Pastures Research (November 1972, Marcos Juárez).



6. Human Resources in Agricultural Research in the Southern Zone  
(1 July 1972 through 30 June 1973, Buenos Aires).
7. Participation in the Seventh World Forestry Congress  
(4–9 December 1972, Buenos Aires).

#### **Line IV. Promotion of Agricultural Production**

1. Seminar on and Advisory Services Provided the Credit Orientation Program  
(4–8 December 1972, Anguil and Corrientes) – Activity IV.S.111.
2. Advisory Services provided National and Provincial Irrigation Entities  
(1 July 1972 through 30 June 1973) – Activity IV.S.421.
3. Socio-economic Study on the Producers of Irrigation in the Province of Jujuy  
(1 July 1972 through 30 June 1973) – Activity IV.S.422.
4. Study on the Incidence of the Irrigation Tariffs Value on the Cost of Agricultural Production  
(1 July 1972 through 30 June 1973) – Activity IV.S.423.
5. Course on the Management and Utilization of Surface and Subterranean Waters  
(19–31 March 1973, Tucuman) – Activity IV.S.426.
6. III National Course on the Operation, Conservation and Development of Irrigation Systems  
(23 April through 18 May 1973, San Juan) – Activity IV.S.427.
7. Study of the Animal Industry in the A–4 Region  
(July–December 1972) – Activity IV.S.514.
8. Study of Animal Industry in the Traditional Area  
Activity IV.S.515.
9. Participation in the Training Cycle on Legal Aspects concerning Waters  
(10–15 July 1972, La Rioja).

#### **Line VI. Promotion and Carrying Out of Structural Changes**

1. Collaboration with the Government of Argentina and the IRYDA on the Management Projects Course  
(September 1972).
2. Organization of Training Cycles in Agrarian Structures Management in Argentina  
(August–September 1972) – Activity VI.S.111.

3. Course on Special Projects for the Management of Agrarian Structures  
(4–6 September 1972, Buenos Aires) – Activity VI.S.112.
4. In–Service Training on the Special Projects for Agrarian Structures Management  
(1 October 1972 through 31 May 1973, Resistencia and Buenos Aires) – Activity VI.S.113.

#### **Line VII. Administration of Agricultural Policy**

1. Training in the Elaboration and Evaluation of Agricultural Projects in Argentina  
(2 May 1973 through 19 June 1973, Buenos Aires) – Activity VII.S.155.
2. Training on the Formulation of the Development Projects in the Central Eastern Zone of Santiago del Estero  
(1 July 1972 through 30 June 1973, Santiago del Estero) – Activity VII.S.311.
3. Advisory Services provided on the Programming and Execution of the Development Project for the Central Eastern Zone of Santiago del Estero  
(1 July 1972 through 30 June 1973, Santiago del Estero) – Activity VII.S.312.

### **BOLIVIA**

#### **Line I. Analysis and Information on Rural Development**

1. Advisory Services provided the Repository Library on Pastures in the High Andes  
(19 July 1971 through 30 June 1972, La Paz) – Activity I.A.241.

#### **Line II. Agricultural Education**

1. Advisory Services to the Higher Agricultural Education Institutions  
(10–21 April 1973) – Activity II.A.211.
2. Advisory Services provided on Extension at the Ministry of Agriculture and Livestock  
(July 1972 through June 1973, La Paz) – Activity II.A.311.
3. National Course on Animal Husbandry and Pastures in the High Andes  
(July 1972 through June 1973, Oruro) – Activity II.A.421.
4. Agricultural Extension and Rural Development Program for the Department of Oruro  
(22–28 April 1973) – Activity II.A.312.

5. Collaboration on the Agricultural Extension and Rural Development Project for the Department of Oruro (25–27 April 1973, Oruro).

2. Study on the Organization of the Institutional System within the Agricultural Sector of Bolivia (1 July 1972 through 30 June 1973, La Paz) – Activity VII.A.221.

### Line III. Agricultural Research

1. Advisory Services provided the Bolivian Institutions on the Preparation and Administration of a Research Program (1 July 1972 through 30 June 1973, La Paz) – Activity III.A.121.
2. In-service Training in Production Systems (1 July 1972 through 30 June 1973, Patacamaya) – Activity III.A.412.

### Line IV. Promotion of Agricultural Production

1. Advisory Services provided the Regional Cooperative Program for the High Andes (5–7 October 1972)

### Line VI. Promotion and Carrying Out of Structural Changes

1. Advisory Services provided the National Council for Agrarian Reform and Community Development (July 1972 through June 1973, La Paz) – Activity VI.A.111.
2. Institutional Diagnosis of Agrarian Reform in Bolivia (10 July 1972 through 25 April 1973) – Activity VI.C.126.
3. Advisory services provided the National Council of Agrarian Reform (29 May through 9 June 1973, La Paz) – Activity VI.C.132.
4. Advisory Services provided the Ministries of Planning and Campesino Affairs in Bolivia, and on the Design of a Project to Establish a Regional Research Center for Agrarian Reform. (19–31 March 1973, La Paz) – Activity VI.C.133.
5. Institutional Diagnosis of Campesino Organization in Bolivia (24 July through 14 December 1972) – Activity VI.C.224.

### Line VII. Administration of Agricultural Policy

1. Training Cycle on the Preparation and Evaluation of Agricultural Projects (1 January through 28 June 1973, La Paz) – Activity VII.A.111.

### BRAZIL

### Line I. Analysis and Information on Rural Development

1. Coordination of IICA Documentation and Information Activities in Brazil (22 January 1973, Brasilia) – Activity I.D.121.
2. Planning of the Regional Documentation Center (7 December 1972, Pelotas) – Activity I.D.125.
3. Advisory Services provided Libraries at the Faculties of Agronomy where Graduate Courses are offered in Agricultural Sciences (4–7 December 1972) – Activity I.D.126.
4. Comparative Analyses of the Objectives, Structure, Personnel and Functions of the Regional Medical Library, and IICA–CIDIA (14 January 1973, Sao Paulo) – Activity I.D.135.
5. Course on Scientific Communication (30 June through 12 July 1972, Porto Alegre) – Activity I.S.224.
6. Promotion of the Graduate Communications Program at the University of Brasilia (9 through 11 October, 1972, Brasilia) – Activity I.S.285.
7. Advisory services in Communication to the National Agricultural Research Enterprise (EMBRAPA) (April 1973, Brasilia) – Activity I.S.287.
8. Cooperation with and Coordination of Activities at the CEPLAC Library (18 January 1973, Itabuna) – Activity I.D.1213.
9. Conference of the Association of Federal District Librarians (23 January 1973, Brasilia) – Activity I.D.1214.
10. Course on the Exploitation of Animal Industry on Irrigated Lands (5 through 22 June 1973, Batalha, Alagoas) – Activity I.S.1314.
11. Conferences on Agricultural Scientific Documentation and the Management of Agricultural Bibliographic Indices (9 through 11 July 1972, Porto Alegre).

12. Assistance to the II Brazilian Seminar on Agricultural Documentation (15 through 18 October 1972, Brasilia).

## Line II. Agricultural Education

1. II International Course on Cacao (11 September through 14 October 1972, Itabuna) – Activity II.T.122.
2. Qualitative and Quantitative Study concerning the Demand for Technicians with Postgraduate Training in Agricultural Sciences in Brazil (1 July 1972 through 30 June 1973) – Activity II.S.133.
3. Support to the ABEAS Secretariat (1 July 1972 through 30 June 1973, Lavras) – Activity II.S.231.
4. Improvements in Irrigation Education (1 July 1972 through 30 June 1973, Pelotas) – Activity II.S.237.
5. Strengthening of the Department of Agricultural Engineering at the Eliseu Maciel Faculty of Agronomy (1 July 1972 through 30 June 1973) – Activity II.S.238.
6. Participation in the Annual Meeting of ABEAS (30 October through 1 November 1972, Salvador) – Activity II.S.239.
7. Collaboration on the Publication of the Bulletin 'ABEAS Informa' (July 1972 through June 1973, Rio de Janeiro) – Activity II.S.240.
8. Academic Up-grading of Teaching Personnel (1 July 1972 through 30 June 1973, Piracicaba, Sao Paulo) – Activity II.S.252.
9. Advisory Services provided the Teaching Support Unit of the Faculty of Veterinary Sciences at the Federal University of Minas Gerais (1 July 1972 through 30 June 1973, Belo Horizonte) – Activity II.S.271.
10. Teaching Methodology Course at the Faculty of Agrarian Sciences of Para (19 February through 2 March 1973, Belem) – Activity II.S.272.
11. Promoting the Establishment of a Teacher's Training Center for the Professors of the Federal University of Minas Gerais (2 July 1972 through 30 June 1973, Belo Horizonte) – Activity II.S.273.
12. Publication of the Bulletin 'Continuação' (June & July 1972, Rio de Janeiro) – Activity II.S.276.

13. Advisory Services on the Organization and Administration of CEPEC (1 July 1972 through 30 June 1973, Itabuna) – Activity II.S.283.

14. Consultation of Experts in Rural Sociology Research and Education for Latin America (26 November through 2 December 1972, Sao Paulo).

## Line III. Agricultural Research

1. Advisory Services to the Ministry of Agriculture on the Formulation and Implementation of a National Agricultural Research Program (1 July 1972 through 30 June 1973, Rio de Janeiro) – Activity II.S.211.
2. Advisory Services on the Elaboration and Quantification of the Possible Impact of Animal Husbandry Technological Systems elaborated on the Basis of Research Data (11 through 15 September 1972, Brasilia) – Activity III.S.268.
3. Advisory Services on the Organization and Administration of CEPEC's Library (1972, Itabuna) – Activity III.S.289.
4. Inventory of the Programs Underway in one of the Principal Institutions of Socio-economic Research in Brazil (July 1972 through March 1973, Pelotas) – Activity III.S.312.
5. Advisory Services on the Identification, Formulation and Execution of Research Projects at CEPLAC (1 July 1972 through 30 June 1973, Itabuna) – Activity III.S.2810.
6. Evaluation of the Economic Aspects of CEPLAC's Research Projects (1 July 1972 through 30 June 1973, Itabuna) – Activity III.S.2812.
7. Collaboration on the Elaboration and Publication of Special Interest Bibliographies for the Program at CEPLAC (1 July 1972 through 30 June 1973, Itabuna) – Activity 2815.
8. Advisory Services to CEPLAC on Plans for the Reformulation of their Administrative Structure and Work Programming (1 July 1972 through 30 June 1973, Itabuna) – Activity III.S.2816.

## Line IV. Promotion of Agricultural Production

1. Advisory Services to the Ministry of Agriculture of Brazil on the National Beans Project (27 October through 16 November, 1973) – Activity IV.T.112.

2. Advisory Services on the Programming and Functioning of the Advisory Commission on Rural Credit (1 July through 30 October 1972, Brasilia) – Activity IV.S.121.
  3. Seminar on Colonization Systems in the Amazon (5 through 12 October, 1972, Belem) – Activity IV.S.123.
  4. Course on the Rural Administration of Irrigated Areas (14 through 26 August 1972, Petrolina) – Activity IV.S.133.
  5. I Course on the Marketing of Agricultural Products (11 through 28 September 1972) – Activity IV.S.135.
  6. I Course on the Selection, Operation and Conservation of Spraying Equipment for Small Scale Irrigation (13 October through 17 November 1972, Petrolina) – Activity IV.S.136.
  7. General Course for Instructors in Irrigation and Mechanical Techniques (30 October through 24 November 1972, Petrolina) – Activity IV.S.137.
  8. Advisory Services on the Institutionalization of a Regional Training Plan in Irrigation (1 July 1972 through 30 June 1973, Rio de Janeiro and Brasilia) – Activity IV.S.139.
  9. Advisory Services on the Elaboration of an Evaluation System for Rural Credit Programs (11 July through 14 August, 1972, Brasilia) – Activity IV.S.171.
  10. Evaluation of Credit Distribution Systems with Support from Producer Organizations (1 January 1973 through 30 June 1973, Belo Horizonte) – Activity IV.S.172.
  11. Advisory Services provided on the starting of a Rural Credit Coordination Mechanism. (1 July 1972 through 30 June 1973, Belo Horizonte) – Activity IV.S.174.
  12. Advisory Services provided on the formulation of a Rural Credit Training Program. (15 December 1972 through 15 February 1973, Rio De Janeiro) – Activity IV.S.181.
  13. The Formulation of a Model for the Programming of Courses for the Agricultural Businesses Project (21–24 March 1973, Goiania) – Activity IV.S.182.
  14. Advisory Services provided ABCAR on conducting the Oriented Credit Program (1 July 1972 through 30 June 1973, Rio de Janeiro) – Activity IV.S.184.
  15. Seminar on the Agricultural Businesses Project (1–7 April 1973, Goiania) – Activity IV.S.185.
  16. Advisory Services provided the Animal Husbandry Program of CEPLAC (16–21 February 1973, Itabuna) – Activity IV.T.1113.
  17. Advisory services provided the Cacao Plant Breeding Program of CEPLAC (11 September through 14 October 1972, Itabuna) – Activity IV.T.1132.
  18. Course on Irrigation for Extension Agents (27 March through 18 April 1973, Petrolina) – Activity IV.S.1310.
  19. Course on the Sistematization of Lands (22 May through 9 June 1973, Petrolina) – Activity IV.S.1311.
  20. Course on the Elaboration of Small Irrigation Projects (23 April through 19 May 1973, Petrolina) – Activity IV.S.1312.
  21. Course on the Analysis and Evaluation of Irrigation Projects (2–26 May 1973, Recife) – Activity IV.S.1313.
  22. Course on the Organization, Operation and Maintenance of Irrigated Areas (June 1973, Petrolina) – Activity IV.S.1316.
- Line VII. Administration of Agricultural Policy**
1. Evaluation and Management of Soils in the Amazon Region (6–23 September 1972, Manaus) – Activity VII.S.235.
  2. Seminar on Colonization Systems in the Amazon (Wet Tropics) (6–11 November 1972, Belem and Altamira) – Activity VII.S.241.
  3. Advisory Services provided the Faculty of Agrarian Sciences of Para on the Establishment of the Forestry Engineering Career (1 July 1972 through 30 June 1973, Belem) – Activity VII.S.261.
  4. Advisory Services provided ACAR–Para on the Socio–economic Study of Para State (1 July 1972 through 30 June 1973, Belem) – Activity VII.S.262.
  5. Advisory Services provided on the Permanent Coordination of the Working Group responsible for preparing the Program (1 July 1972 through 30 June 1973, Porto Alegre) – Activity VII.S.321.

6. Advisory Services provided on Administration Aspects of the Integrated Investment Program of Rio Grande do Sul State (1 July 1972 through 30 June 1973, Porto Alegre) – Activity VII.S.322.
7. Advisory Services provided on Agricultural Zoning Aspects (Natural Resources) (1 July 1972 through 30 June 1973, Porto Alegre) – Activity VII.S.323.
8. Advisory Services provided on Techniques for the Formulation of Specific Programs and Projects related to the Integrated Investments Program of Rio Grande do Sul State (1 July 1972 through 30 June 1973, Porto Alegre) – Activity VII.S.328.
9. Coordination of the Project “Socio-economic diagnostic study of the Cacao Region of Bahia”. (1 July 1972 through 30 June 1973, Itabuna) – Activity VII.S.331.
10. Special advisory services provided CEPLAC in Hydrology, Agricultural Economics and Statistics (1 July 1972 through 30 June 1973, Itabuna) – Activity VII.S.332.
4. Support to Graduate Courses in Chile (1 July 1972 through 30 June 1973, Santiago) – Activity II.S.142.
5. Qualitative Study on the Demand for Postgraduates in Agricultural Sciences in Chile (1 July 1972 through 30 June 1973, Santiago) – Activity II.S.143.
6. Coordination of Graduate Education in Chile with the Graduate Education being developed in other Countries of the Southern Zone (1 July 1972 through 30 June 1973, Santiago) – Activity II.S.144.
7. Support to the Permanent Committee of Deans (1 July 1972 through 30 June 1973) – Activity II.S.241.
8. Improvement of Pedagogical Capacity of Professors (1 July 1972 through 30 June 1973) – Activity II.S.242.
9. Academic Improvement of the Professors (1 July 1972 through 30 June 1973) – Activity II.S.243.

## CHILE

### **Line I. Analysis and Information on Rural Development**

1. Current Situation and Tendencies of the Agricultural Sector in Chile. (1 July 1972 through 30 June 1973). Activity I.S.141.
2. Register of Institutions with Responsibilities in Rural Development in Chile (1 July 1972 through 30 June 1973) – Activity I.S.142.

### **Line II. Agricultural Education**

1. 2nd Meeting of the Advisory Commission on Postgraduate Education (29 May through 1 June 1973, Santiago) – Activity II.S.113.
2. Short Graduate Courses on Potato Production (7 August through 9 September, 1973, Santiago) – Activity II.S.121.
3. Coordination of the Permanent Graduate Program in Agricultural Sciences and Forestry of the Republic of Chile (1 July 1972 through 30 June 1973, Santiago) – Activity II.S.141.

10. Advisory Services provided Higher Agricultural Education Institutions (1 July 1972 through 30 June 1973, Santiago) – Activity II.S.246.
11. Collaboration with the University of Chile in Teaching of Crop Production Methods in the Faculty of Agronomy (1 July 1972 through 30 June 1973, Santiago) – Activity II.S.247.
12. National Meeting of Professors of Entomology, Plant Pathology and Curative Measures of the Chilean Universities (1 September 1972 through 17 June 1973, Chillan) – Activity II.S.248.
13. Participation in the Consultation of FAO–Andean Experts on Training in Rural Extension, for the Caribbean and Latin America (14–24 April 1973, Santiago) – Activity II.S.312.
14. Study Trip to Observe the New Conceptual and Operations Framework of a Support System to Agricultural Extension Institutions (23–26 April 1973, Santiago) – Activity II.

### **Line III. Agricultural Research**

1. Advisory Services provided on the Organization of the Program of the Economic Analysis of Research (July through December 1972, Santiago) – Activity III.S.271.



2. Advisory Services provided on the Formulation and Analysis of an Animal Husbandry Production System (July through December 1972, Santiago) – Activity III.S.272.
3. Advisory Services provided on the Analysis of the Economic Aspects Important in Programming Research (July through December 1972, Santiago) – Activity III.S.273.
4. Inventory of the Programs being carried out in one of the Principle Socio–Economic Research Institutions (July 1972 through March 1973, Santiago) – Activity III.S.313.
5. Participation in the Seminar on Milling and Classification of Woods (FAO/Finland) (12 March 1973)
6. Advisory Services provided the Austral University of Chile in Wood Technology (25 May 1972, Valdivia).

#### **Line IV. Promotion of Agricultural Production**

1. Advisory Services provided on the Elaboration of Plans for Exploitation, at the Level of Units of Production (30 May 1972 through 1 June 1973) – Activity IV.S.141.
2. Training and Advisory Services provided on Rural Enterprise Training (30 May 1972 through 1 June 1973) – Activity IV.S.142.
3. Support to the Technical Assistance Division of the Agriculture and Cattle Service (DIPA) (30 May 1972 through 1 June 1973) – Activity IV.S.143.
4. Seminar on Agricultural Extension (Technical Assistance) (28 August through 8 September 1972, Pucon) – Activity IV.S.143a.
5. Advisory Services provided on the Definition of Integrated Agroeconomic Systems of Production by Items (30 May 1972 through 1 June 1973) – Activity IV.S.144.
6. Advisory Services provided the National Entities on Irrigation (1 November 1972 through 30 June 1973, Santiago) – Activity IV.S.431.
7. National Course on Operations, Maintenance and Development of Irrigation Areas (14 August through 15 September 1972, Linares) – Activity IV.S.432.

8. Pilot District on Irrigation and Conservation of Land and Water DIGUA (1 November 1972 through 30 June 1973) – Activity IV.S.433.
9. Small Pilot Districts for Conservation of Land and Water (13 March through 30 June 1973, Curacavi) – Activity IV.S.433a.

#### **Line VI. Promotion and Execution of Structural Changes**

1. Advisory Services provided the Inter–American Meeting of Experts on Farm Community Enterprises (30 April through 5 May 1973, Santiago) – Activity VI.C.115.
2. Institutional Diagnosis of Agrarian Reform in Chile (July 1972 through April 1973, Santiago) – Activity VI.C.123.
3. Training, Research and Advisory Services for Planning Farmer Organization (1 May through 30 June, 1973, Santiago) – Activity VI.S.131.
4. Programming of Productive Resources (Productive Frame 1973–74) for the Reformed Sub–sector (1 July 1972 through 30 March 1973, Santiago) – Activity VI.S.132.
5. Agricultural Plan 1974–75 (1 March through 30 June 1973, Santiago) – Activity VI.S.133.
6. Training and Advisory Services in Socio–Economic Research Projects (1 July 1972 through 30 June 1973, Santiago) – Activity VI.S.134.
7. Control on the Progress of the Programs (1 July 1972 through 30 June 1973, Santiago) – Activity VI.S.136.
8. Institutional Diagnosis on Farmer Organization (24 July 1972 through 20 October 1973) – Activity VI.C.222.

#### **COLOMBIA**

#### **Line I. Analysis and Information on Rural Development**

1. Editing the Agrarian Reform News Bulletin (1 July 1972 through 30 June 1973, Bogota) – Activity I.C.111.

2. Editing the Proceedings of the IV Inter-American Meeting of Agrarian Reform Executives (21 July 1972 through 30 June 1973, Bogota) – Activity I.C.113.
  3. Editing the Proceedings of the III Inter-American Meeting of Agrarian Reform Executives (15 October 1972 through 30 June 1973, Bogota) – Activity I.C.114.
  4. Editing and Distributing the Theoretical Framework for Agrarian Reform in Latin America (IICA-FAO) (June 1973, Bogota) – Activity I.C.116.
  5. Collaboration to the Regional Office of the Andean Zone on the Compiling of Information on the Evolution of Agriculture and the Agricultural Institutions of Colombia (4 December 1972 through 28 June 1973, Bogota) – Activity I.A.121.
  6. Collaboration to IICA-CIDIA on a Specialized Bibliography Documentation Service (1 July 1972 through 30 June 1973, Bogota) – Activity I.C.121.
  7. Collaboration with IICA-CIDIA on the editing of the journal "Rural Development in the Americas" (1 July 1972 through 30 June 1973, Bogota) – Activity I.C.122.
  8. Assistance on the Preparation and Revision of Bibliographies for IICA-CIRA (1 January through 30 March 1973, Bogota) – Activity I.C.123.
  9. In-Service Training in Agro-Economic Planning (1-15 February 1973, Bogota) – Activity I.C.124.
  10. In-Service Training in Planning (23 April through 3 June 1973, Bogota) – Activity I.C.125.
  11. Participation in the Annual Meeting of the National Sub-system of Agricultural Information (17-18 January 1973, Bogota) – Activity I.D.129.
  12. Participation in the ASIC Meeting (Association Scientifique Internationale du Café) (4-9 June 1973, Bogota) – Activity I.D.134.
  13. Publication of three numbers of the Journal 'Rural Development in the Americas' (1 July 1972 through 30 June 1973, Bogota) – Activity I.D.323.
  14. Coordination of Activities with COLCIECIAS (Fondo Colombiano de Investigaciones Científicas) (7 June 1973, Bogota) – Activity I.D.1212.
  15. In-service Training in Bibliographic Automation (20-27 January 1973, Bogota).
  16. Participation in the I Meeting of the Advisory Council for the National Sub-system of Agricultural Sciences Information (20 January 1973, Bogota).
  17. Basic Education in Bibliographies and Documentation, at a National Level (28 July through 30 December 1972, Bogota).
  18. Preparation and Revision of Bibliographies for IICA-CIRA (1 July through 30 December 1972, Bogota).
  19. Participation in the First Meeting of the Working Group on Automatization Projects for Colombian Libraries (1-5 August 1972, Bucaramanga).
  20. Participation in the 12th. Regional Conference of FAO for Latin America (27-28 August 1972, Cali) – Activity I.D.142.
- Line II. Agricultural Education**
1. Second Regional Seminar for Training Professors in University Teaching Methodology (7-31 May 1973, Bogota) – Activity II.A.261
  2. Participation in the Seminar on "Potential of Beans and Other Edible Legumes in Latin America" (February through March 1973, Cali).
  3. Collaboration on the CREFAL Course (UNESCO) (3 May 1973, Popayán).
  4. Collaboration on the Agricultural Education Seminar (1 December 1972, Chaparral, Tolima).
  5. In-service Training for Course and Seminar Programming (26 November through 15 December 1972, Bogota).
- Line III. Agricultural Research**
1. Participation in the Meeting of the Organizing Committee re: the Seminar for Bean Research Workers in Latin America (16-17 July 1972, Palmira and Cali) – Activity II.T.15.
  2. Participation in International Technical Meetings (26 February through 1 March 1973, Cali) – Activity III.N.318.

#### **Line IV. Promotion of Agricultural Production**

1. In-service Training of Two Bolivian Technicians in Marketing, in Colombia (14 May through 9 June 1973) – Activity IV.A.112.
2. In-service Training of three Ecuadorian Technicians at IDEMA, Colombia (14 May through 9 June 1973) – Activity IV.A.124.
3. In-service Training in Colombia, of three Peruvian Technicians in Marketing (14 May through 9 June 1973) – Activity IV.A.133.
4. Collaboration on the Course on the Management and Administration of Warehouses and Silos for the Storage of Grains (6 November through 15 December 1972, Bogota).
5. Compiling a Selective Bibliography on Agricultural Marketing (1 July through 30 December 1972, Bogota).
6. Attending Dominican and Haitian Functionaries Studying Coffee Programs (18–29 November 1972, Bogota and Pereira).
7. Participation in the International Seminar on Increased Production of Beef Cattle in the Tropics (9–12 April 1972, Cali).

#### **Line V. Multinational Integration**

1. Conference on “The Andean Sub-regional Integration Agreement and the Participation of the Agricultural Sector” (11 July 1972, Bogota).

#### **Line VI. Promotion and Carrying Out of Structural Changes**

1. Advisory Services provided INCORA on a Research Project on Community Enterprises in Cooperation with FAO (July 1972 through June 1973, Bogota) – Activity VI.C.112.
2. Elaboration of a Document on Agrarian Reform and Campesino Community Enterprises (5 March through 25 April 1973, Bogota) – Activity VI.C.114.
3. Study of Costs to Initiate Community Enterprises (4–16 October 1972, Bogota) – Activity VI.C.116.

4. Advisory Services provided INCORA on the Elaboration of an Accounting Manual for Community Enterprises (4 July through 16 August 1972, Bogota) – Activity VI.C.117.
5. Diagnostic Study of Agrarian Reform Institutions in Colombia (July through September 1972) – Activity VI.C.122.
6. In-service Training on the Institutional Diagnosis of Agrarian Reform (September 1972 through February 1973, Bogota) – Activities VI.C.127–131.
7. In-service Training in Cadastral Surveying and Farm Evaluations (28 August through 29 September 1972, Bogota) – Activity VI.A.135.
8. Regional Seminar on Rural Cadastral Surveys (28 August through 1 September, 1972, Bogota) – Activity VI.A.141.
9. Research Experimentation on Training Methods in Development (July 1972 through June 1973) – Activity VI.C.213.
10. Preparation and Publication of a Report on Activities in Extracurricular Campesino Organization (1 February through 30 June 1973, Bogota) – Activity VI.C.213.
11. Institutional Diagnostic Study on Campesino Organizations in Colombia (19 July through 12 September 1973, Bogota) – Activity VI.C.221.
12. In-service Training: The Study of a Case in Campesino Organization in Venezuela (1–30 September 1972, Bogota) – Activity VI.C.225.
13. In-service Training provided a functionary (5 August through 15 November 1972, Bogota) – Activity VI.C.225.
14. In-service Training in Campesino Organization (3 August through 4 October 1972, Bogota) – Activity VI.C.227.

#### **Line VII. Administration of Agricultural Policy**

1. Study on the Methodology for Applying Physical Planning to Regional Plans (25 September 1972 through 30 June 1973, Bogota) – Activity VII.C.111.
2. Seminar on Rural Physical Planning (3–9 December 1972, Bogota) – Activity VII.C.112.

3. Participation on Meeting of Experts on the Evaluation of Social Projects (7–10 July 1972, Bogota) – Activity VII.C.121.
4. Study of the Coordination of Agricultural Extension and Research Organizations (ICA) with 'Caja' Credit (1 July 1972 through 30 June 1973, Bogota) – Activity VII.A.212.
5. Technical Meeting on Programming for the Development of Forestry in the American Humid Tropics (19–24 February 1973, Medellin) – Activity VII.S.232.
6. Second Course in Social Communication (12 February through 2 March 1973, Bogota) – Activity VII.A.321.
7. Elaboration of Models for Training Activities of PNCA (15 October 1972 through 20 June 1973, Bogota) – Activity VII.A.321.
8. Course on Written Communication (20–30 March 1973, Bogota) – Activity VII.A.321.1.
9. Executive Meeting on Technical Assistance (25–27 April 1973, Bogota) – Activity VII.A.321.4.
10. I Seminar on Communications for Development (11–15 September 1972, Bogota) – Activity VII.A.323.
11. II Seminar on Communications for Development (7–11 May 1973, Bogota) – Activity VII.A.323.
12. Seminar on Extension Methodology (3–13 October 1972, Bogota) – Activity VII.A.326.
13. Research into Requirements for Training in the Agricultural Sector (15 July 1972 through 20 June 1973, Bogota) – Activity VII.A.329.
14. Course on Technology and Marketing of Products (23 April through 12 May 1973, Bogota) – Activity VII.A.331.
15. Collaboration with the Andean Zone on In-service Training in Marketing (14 May through 8 June 1973, Bogota) – Activity VII.A.331.2.
16. Course on the Management of Silos (21 July through 18 December 1972, Bogota) – Activity VII.A.332.
17. Collaboration on the Course for the Administration of Self-service Retail Stores (11–15 October 1972, Bogota) – Activity 333.13.
18. Short Course on the Marketing of Inputs (2–12 October 1972, Bogota) – Activity VII.A.334.
19. Research into Problems on Drying and Airing (1 November 1972 through 30 June 1973, Bogota) – Activity VII.A.336.
20. Research on the Elaboration of a Manual on Drying and Airing Grains (1 November 1972 through 30 June 1973, Bogota) – Activity VII.A.337.
21. Course on Classification, Treatment and Conservation (19 February through 16 March 1973, Bogota) – Activity VII.A.338.
22. Course on Storing Techniques (20 March through 28 April 1973, Bogota) – Activity VII.A.339.
23. Course on the Administration of Human Resources (8–12 August 1972, Bogota) – Activity VII.A.342.
24. Seminar on Industrial and Human Resource Relations in the Organisms of the Agricultural Sector (14–25 May 1973, Bogota) – Activity VII.A.342.
25. Seminar on Rural Administration and the Economics of Production for the Coffee Growers Federation (31 July through 12 August 1972, Bogota) – Activity VII.A.343.
26. Collaboration on the Forestry Seminar for Updating Information (1–5 August 1972, Bogota) – Activity VII.A.354.

## COSTA RICA

### Line I. Analysis and Information on Rural Development

1. Regulations for the Distribution of Publications in the Texts Program (August 1972, Turrialba).
2. Bulletin: 'What is the Teaching Texts and Materials Program?' (August 1972, Turrialba).
3. Cooperation on the Establishment of an Agricultural Documentation Center in Brazil (1 July 1972 through 30 June 1973, Turrialba) – Activity I.D.122.
4. Organization of the IV Round Table of the Inter-American Program for the Development of Agricultural Libraries – IICA/AIBDA (1–31 July 1972, Turrialba) – Activity I.D.131.

5. **Organization and Development of a Documentation Unit for the American Tropics Cooperative Program**  
(1 July 1972 through 30 June 1973, Turrialba) – Activity I.D.132.
6. **Collaboration with FAO on the Development of an Agricultural Sciences Vocabulary in Spanish**  
(July 1972 through June 1973, Turrialba) – Activity I.D.143.
7. **In-service Training of a Technician in Agricultural Information**  
(18 May through 2 June 1973, Turrialba) – Activity I.N.152.
8. **Regular Course in Graduate School: Utilization of Scientific Literature**  
(6 October through 15 December 1972, Turrialba) – Activity I.D.211.
9. **Course in Technical Writing for the Graduate School**  
(April through June 1973, Turrialba) – Activity I.D.212.
10. **Collaboration on the Training of Students in the Utilization of Scientific Literature for CTEI**  
(24–18 May 1973, Turrialba) – Activity I.D.213.
11. **XVI International Course in Library Science and Agricultural Documentation**  
(1 March through 30 June 1973, Turrialba) – Activity I.D.221.
12. **Up-dating Technology and Information of Agricultural Librarians and Documentalists**  
(July 1972 through June 1973, Turrialba) – Activity I.D.222.
13. **In-service Training in Technical Communication**  
(23 August through 6 September 1972, Costa Rica)– Activity I.N.225C.
14. **In-service Training in Cataloging and Classification of Bibliographic Material**  
(6–28 February 1973, Turrialba) – Activity I.D.227.
15. **Participation in the Annual Meeting of the AIBDA Executive Council**  
(16–17 August 1972, Turrialba) – Activity I.D.232.
16. **Cooperation with the AIBDA General Secretariat on the Organization of the VI World Congress of Agricultural Librarians and Documentalists (IAALD)**  
(1972 and 1973) – Activity I.D.233A.
17. **In-service Training in Library Science**  
(31 August through 30 September 1972, Turrialba) – Activity I.A.244.
18. **Analysis and Technical Processing of Documents**  
(1 July 1972 through 30 June 1973, Turrialba) – Activity I.D.311.
19. **The Development of Collections**  
(1 July 1972 through 30 June 1973, Turrialba) – Activity I.D.312.
20. **Distribution and Interchange of Publications at Hemispheric and World-wide Levels**  
(1 July 1972 through 30 June 1973, Turrialba) – Activity I.D.313.
21. **Inter-Library Document Circulation and Loans**  
(1 July 1972 through 30 June 1973, Turrialba) – Activity I.D.314.
22. **Publication of 4 issues of the 'Turrialba' Journal, and 25 issues of Reprints**  
(July 1972 through June 1973, Turrialba) – Activity I.D.321.
23. **Publication of Communication Documents**  
(July 1972 through June 1973, Turrialba) – Activity I.D.322.
24. **Publication of 4 issues of the Bulletin for Agricultural Libraries**  
(1 July 1972 through 30 June 1973, Turrialba) – Activity I.D.324.
25. **Bibliography on the Coffee Rust Disease**  
(1 July 1972 through 12 April 1973, Turrialba) – Activity I.D.331.
26. **Bibliography on the Coffee Borer**  
(September 1972 through April 1973, Turrialba) – Activity I.D.332.
27. **Publication of the French Edition of the IICA Norms for Bibliographies**  
(15 November 1972 through 28 February 1973, Turrialba) – Activity I.D.332.4.
28. **Cacao Bibliography**  
(1 July 1972 through 30 June 1973, Turrialba) – Activity I.D.333.
29. **Bibliography on Beans**  
(1 July 1972 through 30 June 1973, Turrialba) – Activity I.D.334.
30. **Cowpea Bibliography**  
(15 October 1972 through 8 June 1973, Turrialba) – Activity I.D.335.
31. **Selective Bibliography on the Meliaceae**  
(August 1972 through February 1973, Turrialba) – Activity I.D.336.
32. **Bibliography on Tropical Pastures and Forages**  
(September 1972, Turrialba) – Activity I.D.337.



33. Bibliography on Rural Youth (August – December 1972, Turrialba) – Activity I.D.338.
34. Coordination of Agricultural Bibliographies (1 July 1972 through 30 June 1973, Turrialba) – Activity I.D.339.
35. Publication of the book 'Agrarian Reform in Latin America' (June through December 1972) – Activity I.D.341.
36. Publication of the book 'Written Communication' (Alejandro MacLean) (July 1972 through June 1973, Turrialba) – Activity I.D.342.
37. Publication of the book 'Introduction to the Physics and Chemistry of Foodstuffs' (Francisco del Valle) (July 1972 through June 1973, Turrialba) – Activity I.D.343.
38. Publication of the book 'Introduction to Statistics' (July 1972 through June 1973, Turrialba) – Activity I.D.344.
39. Publication of the book 'Introduction to Soil Chemistry' (Dr. Hans W. Fassbender) (July 1972 through June 1973, Turrialba) – Activity I.D.345.
40. Coordination of the Questionnaire on the Need for Texts in Agricultural Education in this Hemisphere (July 1972 through June 1973, Turrialba) – Activity I.D.346.
41. Inventory of Books in the Texts Program, Current Costs and Income from Publications Sold (August 1972, Turrialba) – Activity I.D.347.
42. Project for a Future Texts Program (August 1972, Turrialba) – Activity I.D.348.
43. Preparation of a Guide for the Elaboration of a Project for the Creation of an Ecuadorian Center for Agricultural Documentation (April through May 1973, Turrialba) – Activity I.D.1210.
44. Collaboration on the Planning of a National Course on Agricultural Libraries in Mexico (May through June 1973, Turrialba) – Activity I.D.2210.
45. Supplement to the Latin American Index of Agricultural Theses (July 1972 through June 1973, Turrialba) – Activity I.D.3310.
46. 3,000 Agricultural Books in Spanish (June 1973, Turrialba) Activity I.D.3311.
47. Literature on Library Science and Documentation (1 July 1972 through 30 June 1973, Turrialba) – Activity I.D.3313.
48. IICA Contributions to the Literature in Agricultural Sciences (1 July 1972 through 30 June 1973, Turrialba) – Activity I.D.3314.
49. Directory of Acronyms in Agricultural Sciences (July 1972 through June 1973, Turrialba) – Activity I.D.3315
50. Collective Catalog on Periodical Publications on Agricultural Libraries in Latin America (1 July 1972 through 30 June 1973) – Activity I.D.3316.
51. Participation on the Preparation of the Agricultural Bibliography for Latin America (1 July 1972 through 30 June 1973, Turrialba) – Activity I.D.3317.
52. Research in Producing IICA–CIDIA Catalogs on the Computer (1 July 1972 through 30 June 1973, Turrialba) – Activity I.D.3318.
53. Elaboration of a List of Epigraphs in Spanish (July 1972 through June 1973, Turrialba) – Activity I.D.3319.
54. Catalog of the Official Publication of IICA (30 August through 30 October 1972, Turrialba) – Activity I.D.3320.
55. Bulletin on the Structure and Functions of IICA–CIDIA (1 July 1972 through 30 June 1973, Turrialba) – Activity I.D.3321.
56. Services provided on Short Specialized Bibliographies, at a Hemispheric Level (July 1972 through June 1973, Turrialba) – Activity I.D.3322.
57. Printing Services, at a Hemispheric Level (1 July 1972 through 30 June 1973, Turrialba) – Activity I.D.3323.
58. Participation on the Preparation of an Experimental Issue of a World-wide Agricultural Bibliography for the International Information System for Agricultural Sciences and Technology (AGRIS) (1 November 1972 through 30 May 1973, Turrialba) – Activity I.D.3324.
59. Participation in the IV Round Table of the Inter-American Program for the Development of Agricultural Libraries (18 August 1972, Turrialba).

60. Guide for Forest Industries  
Activity I.T.II.1.
61. An Evaluation of the Socio-economic Potential of  
Tropical Forests of the Area. Activity I.T.II.2.

## Line II. Agricultural Education

1. Regular Graduate Course: Soil Fertility and Fer-  
tilizers  
(July–September 1972, Turrialba)
2. Regular Graduate Course: Perennial Crops  
(July–September 1972, Turrialba) – Activity  
II.T.1132.
3. Collaboration on the Irrigation and Drainage  
Course at the Univ. of Costa Rica  
(March–April 1973, San Jose) – Activity  
II.T.112.
4. Regular Graduate Course: English Language  
(October 1972 through June 1973, Turrialba).
5. In–service Training in Tropical Silviculture  
(May 1972, Turrialba) – Activity II.T.1.
6. In–service Training in Wood Technology  
(October 1972 through June 1973, San Jose) –  
Activity II.T.1.
7. Course on Teaching Methodology for Agricultural  
Sciences  
(4–8 September 1972, Turrialba) – Activity  
II.N.122.
8. In–service Training in Plant Physiology  
(6–12 November 1972, Turrialba) – Activity  
II.T.123.
9. Regular Graduate Course: Forest Management  
(April–June 1973, Turrialba) – Activity II.T.131.
10. Regular Graduate Course: Forest Mensuration  
(February–March 1973, Turrialba) – Activity  
II.T.135.
11. Advisory Services Provided CSUCA through the  
Permanent Commission on Higher Agricultural  
Education (CEPAS)  
(12–14 March, 1973, San Jose) – Activity  
II.N.311.
12. Regular Graduate Course: Data Processing  
(October–December 1972, Turrialba) – Activity  
II.T.1101.
13. Regular Graduate Course: Advanced Genetics  
(April–June 1973, Turrialba) – Activity  
II.T.1111.
14. Regular Graduate Course: Plant Breeding  
(July–September 1972, Turrialba) – Activity  
II.T.1112.
15. Regular Graduate Course: Cytogenetics  
(October–December 1972, Turrialba) – Activity  
II.T.1113.
16. Regular Graduate Course: Soil Microbiology  
(October–December 1972, Turrialba) – Activity  
II.T.1124.
17. Regular Graduate Course: Soil Physics  
(April–June 1973, Turrialba) – Activity  
II.T.1125.
18. Regular Graduate Course: Soil Management  
(July–September, Turrialba) – Activity II.T.1126.
19. Regular Graduate Course: Principles of Bio-  
chemistry  
(October–December 1972, Turrialba) – Activity  
II.T.1134.
20. Regular Graduate Course: Principles of Disease  
Control for Tropical Crops  
(January–March 1973, Turrialba) – Activity  
II.T.1135.
21. Regular Graduate Course: Plant Physiology  
(January–March, 1973, Turrialba) – Activity  
II.T.1141.
22. In–service Training in Soil Management  
(March–June 1973, Turrialba) – Activity  
II.T.1231.
23. In–service Training in Plant Irradiation Tech-  
niques  
(September 1972 through February 1973, Turrial-  
ba) – Activity II.T.1232.
24. Regular Graduate Course: Dendrology  
(October–December 1972, Turrialba) – Activity  
II.T.1321.
25. Regular Graduate Course: General Basic Ecology  
(April–June 1973, Turrialba) – Activity  
II.T.1322.
26. Regular Graduate Course: Silviculture I  
(October–December 1972, Turrialba) – Activity  
II.T.1323.
27. Regular Graduate Course: Silviculture II  
(April–June 1973, Turrialba) – Activity  
II.T.1324.
28. Participation in the Course on the Training of  
Extension Agents for the Kellogg–PIJR Project  
(29–31 August 1972, San Jose).

29. Regular Graduate Course in Wood Technology (January–March 1973, Turrialba) – Activity II.T.134.
30. Intensive Short Course on the Production Physiology of Bovines (May–June 1973, Turrialba) – Activity II.T.151.
31. Course on Animal Genetics at the University of Costa Rica Activity II.T.152.
32. In–service Training in Animal Production Activity II.T.153.
33. Regular Graduate Course: Animal Nutrition (July–September 1972, Turrialba) – Activity II.T.1411.
34. Regular Graduate Course: Basic Animal Physiology (April–June 1973, Turrialba) – Activity II.T.1412.
35. Regular Graduate Course: Cattle Management (July 1972 through June 1973, Turrialba) – Activity II.T.1413.
36. Special Problems in Animal Husbandry (January–March 1973, Turrialba) – Activity II.T.1414.
37. Regular Graduate Course: The Management and Evaluation of Pastures (April–July 1973, Turrialba) – Activity II.T.1415.
38. Regular Graduate Course: Quantitative Genetics (April–June 1973, Turrialba) – Activity II.T.1416.
39. Regular Graduate Course: Animal Breeding (July–September 1972, Turrialba) – Activity II.T.1417.
4. Genetics and Plant Breeding in Edible Grain Legumes (July 1972 through June 1973, Turrialba) – Activity III.T.112.
5. Collaboration on the Training of Graduate Researchers (May–June 1973, Turrialba) – Activity III.N.113.
6. Genetics and Plant Breeding in Cacao (July 1972 through February 1973, Turrialba) – Activity III.T.113.
7. Study on the Flower: Bunch Relationships in the Peach Palm (July 1972 through June 1973, Turrialba) – Activity III.T.114.2.
8. Diametric Increase in the Macadamia Plantations (July 1972 through June 1973, Turrialba) – Activity III.T.114.3.
9. Characterization of the Chemical Properties of Tropical Soils (July 1972 through February 1973, Turrialba) – Activity III.T.121.
10. Research on Methodology for the Chemical Analysis of Soils (July 1972 through February 1973, Turrialba) – Activity III.T.122.
11. Biochemical Transformations in Compounds and Elements of Agricultural Importance (July 1972 through February 1973, Turrialba) – Activity III.T.123.
12. Influence of Mineral Concentration in Soils, on Productivity (July 1972 through February 1973, Turrialba) – Activity III.T.124.
13. Determination of the Physical Characteristics of Tropical Soils in Relationship to the Requirements of some Crops (July 1972 through June 1973, Turrialba) – Activity III.T.125.

### Line III. Agricultural Research

1. Testing for Adaptability of the *Pinus caribaea* var. hondurensis, on an International Scale (December 1972 through February 1973, Turrialba) – Activity III.T.16.
2. Fellowships for the Postgraduate Training of Researchers in Animal and Pastures Production (July 1972 through June 1973, Turrialba) – Activity II.N.111.
3. In–service Training for Personnel from the Northern Zone in Animal and Pastures Production (July 1972 through February 1973, Turrialba) – Activity III.N.112.
14. Fertilization in Adult Peach Palm (*Guiljelma gasipaes*) trees (July 1972 through June 1973, Turrialba) – Activity III.T.131.2.
15. Fertilization of *Macadamia integrifolia* plants (July 1972 through June 1973, Turrialba) – Activity III.T.131.3.
16. Improvements in the Management Practices of Edible Grain Legumes (July 1972 through June 1973, Turrialba) – Activity III.T.132.

17. Study of the Behavior of Existing Species in a Natural Tropical Forest  
(July 1972 through June 1973, Turrialba) – Activity III.T.151.
18. Testing for the Derivation of *Pinus oocarpa*  
(January–February 1973, Turrialba) – Activity III.T.161.
19. Growth Determination of Forest Species in Test Plots  
(July 1972 through June 1973, Turrialba) – Activity III.T.162.
20. An Administration System Applicable to Forestry Nurseries on a PERT/CPM Basis  
(April 1973, Turrialba) – Activity III.T.163.
21. Effect of Naphthalene Acetic Acid on the Rooting of Cuttings from *Terminalia ivorensis* A. Chev.  
(August 1972 through February 1973, Turrialba) – Activity III.T.164.
22. Collaboration on the Implementation of PCCMCA Test Plots  
(October 1972 through March 1973) – Activity III.N.315.
23. Programming and Supervision of Research  
(July 1972 through June 1973, Turrialba) – Activity III.T.1111.
24. Induction of Mutations in Cassava  
(July 1972 through June 1973, Turrialba) – Activity III.T.1113.
25. Selection of Compact Coffee Mutants  
(July 1972 through June 1973, Turrialba) – Activity III.T.1114.
26. Genetics and Plant Breeding in Coffee for Rust Resistance  
(July 1972 through June 1973, Turrialba) – Activity III.T.1141.
27. Production of Coffee Cultivars with Low Caffeine Content  
(July 1972 through June 1973, Turrialba) – Activity III.T.1141a.
28. Study of the Pathogenicity of Various *Metarrhizium anisopliae* Mutants Induced by Gamma Radiation  
(August 1972 through April 1973, Turrialba) – Activity III.T.1341.
29. Study of the Resistance of Several *Bacillus thuringiensis* varieties to Ultraviolet Radiation  
(August 1972 through April 1973, Turrialba) – Activity III.T.1342.
30. Study on the Use of *Bacillus thuringiensis* on the Control of *Dermatobia hominis*  
(August 1972 through April 1973, Turrialba) – Activity III.T.1351.
31. Determination of  $Cl_2O$  of Several Varieties of *Bacillus thuringiensis* for the First Instar Larvae of *Hypsipyla*.  
(July 1972 through April 1973, Turrialba) – Activity III.T.1352.
32. Rearing of *Metarrhizium anisopliae* on a Medium Scale for Field Research  
(August 1972 through April 1973, Turrialba) – Activity III.T.1353.
33. Utilization of Radioisotopes in Agriculture: The Determination of the Integument Density of Several Bean Varieties, using Beta Rays from  $Cl_{36}$   
(August 1972 through April 1973, Turrialba) – Activity III.T.1361.
34. Determination of the Growth Habits, Photosynthetic Efficiency and Maximum Yields of Grain Legumes  
(July 1972 through June 1973, Turrialba) – Activity III.T.1411.
35. Growth Determination of Valuable Species in Combined Sub-Plantations  
(March 1972 through June 1973, Turrialba) – Activity III.T.1512.
36. The Orientation of *Hypsipyla* by Chemical Reception and Different Radiation Wavelengths  
(July 1972 through January 1973, Turrialba) – Activity III.T.1522.
37. Determination of the Pests which Affect Meliaceae  
(July 1972 through June 1973, Turrialba) – Activity III.T.1522.
38. Development of Biological Control Methods for *Hypsipyla*  
(July 1972 through June 1973, Turrialba) – Activity III.T.1523.
39. Determination of the Tissue Fraction of *Cedrela* spp. and *Toona ciliata* var. *australis*, responsible for the attraction and death of *Hypsipyla grandella*.  
(August 1972 through January 1973, Turrialba) – Activity III.T.1524.
40. Improvement of Artificial Rearing Techniques for *Hypsipyla*  
(July 1972 through February 1973, Turrialba) – Activity III.T.1525.
41. Determination of the Resistance of *Toona ciliata* var. *australis* to *Hypsipyla grandella* attack  
(July 1972 through February 1973, Turrialba) – Activity III.T.1526.
42. Silvicultural Study of the Native Species in Costa Rica  
(April–June 1973, Turrialba).
43. Commercial Plantations of Rapid Growth Forest Species  
(July 1972 through June 1973, Turrialba).

44. Symposium on the Integral Control of *Hypsipyla* (5–12 March 1973, Turrialba).
45. Vegetative Succession and Recuperation of Ecosystems (July 1972 through June 1973, Turrialba).
46. Study on the Storage of *Swietenia macrophylla* Seeds (December 1972 through April 1973, Turrialba).
47. Experiments of *Cordia alliodora*, *Cedrela salvadorensis*, *Calophyllum brasiliense* and *Aspidosperma megalocarpum* Plantations in Combination with *Manihot esculenta* (July 1972 through June 1973, Turrialba).
48. An Evaluation of Urea Reenforced with Sulfur in Comparison to Other Nitrogen Sources, in the Cultivation of Rice (July 1972 through June 1973, Turrialba).
49. A Study of the Different Systems of Intensive Cultivation with Different Levels of Fertilization (January through June 1973, Turrialba).
50. The Radiosensitivity, Induction of Mutations and Cytogenetics of Tropical Plants (July 1972 through June 1973, Turrialba) – Activity III.T.111.
51. Factors Affecting the Utilization of Pastures by Cattle (July 1972 through June 1973, Turrialba) – Activity III.T.171.
52. Utilization of Agro–Industrial By–products in Cattle Feeding (July 1972 through June 1973, Turrialba) – Activity III.T.172.
53. Techniques for Establishing and Managing Pastures and Cutting Forages (July 1972 through June 1973, Turrialba) – Activity III.T.181.
54. Legumes and Grass–Legume Mixtures (July 1972 through June 1973, Turrialba) – Activity III.T.181.2.
55. The Economic Aspects of the Supply of Lumber in the Forestry Sector of Costa Rica (July 1972 through February 1973, Turrialba) – Activity III.T.153.
56. Selection of Characteristics of Economic Importance in Beef and Dairy Cattle (July 1972 through June 1973, Turrialba) – Activity III.T.191.
57. Crossing Systems in Beef and Dairy Cattle (July 1972 through June 1973, Turrialba) – Activity III.T.192.
58. Research Administration (July 1972 through June 1973, Turrialba) – Activity III.T.1112.
59. Study and Preparation of External Aid Projects (July 1972 through June 1973, Turrialba) – Activity III.T.1112a.
60. The Effect of Protein and Energy Supplementation and Grazing Pressure, on the Weight Increase of Cattle on Guinea Grass (November 1972 through June 1973, Turrialba) – Activity III.T.1711.
61. The Effect of Protein and Energy Supplementation and Grazing Pressure on the Milk Production of Holstein Cattle (January through April 1973, Turrialba) – Activity III.T.1712.
62. The Effect of Banana Supplementation and Length of Grazing Period in Guinea Pastures, on the Weight Gain of Cattle, under different Grazing Pressures (January through June 1973, Los Diamantes, C. R.) – Activity III.T.1713.
63. The Effect of Protein and Energetic Supplementation and Grazing Pressure on the Consumption of Guinea Grass (July 1972 through June 1973, Turrialba) – Activity III.T.1715.
64. The Effect of Protein and Forage Levels on the Fattening of Steers on a High Molasses Content Diet (August through November 1972, Turrialba) – Activity III.T.1721.
65. Substitute Grasses with Bagasse in a Molasses–based Fattening System (November 1972 through June 1973, Turrialba) – Activity III.T.1722.
66. Minimizing the Costs of Protein Supplements in a Molasses–based Fattening System (July 1972 through June 1973, Turrialba) – Activity III.T.1723.
67. The Effect of Grazing Time on the Growth of Dairy Heifers with Molasses–based Supplementation *ad libitum* (July 1972 through March 1973, Turrialba) – Activity III.T.1724.
68. The Fattening of Steers in Summer Pastures with Molasses and Protein Supplements (October 1972 through February 1973, Turrialba) – Activity III.T.72.
69. The Effect of Artificial Milk with a Concentration of Animal Fat on the Growth of Dairy Calves (December 1972 through June 1973, Turrialba) – Activity III.T.1726.



70. Growth and Fattening of Brahman Steers on Culled Bananas (December 1972 through June 1973, Limon, C.R.) – Activity III.T.1727.
71. Observation of the Behavior of Grass Species in the Introduction Garden (July 1972 through June 1973, Turrialba) – Activity III.T.1811.
72. Intensive Production of Bermuda Coast Grass, Crops No. 1, for Utilization in Grazing Pastures (July 1972 through June 1973, Turrialba) – Activity III.T.1812.
73. The Effect of Amount and Frequency of Nitrogen Application, on the Cutting Frequency and Height and on the Productivity of Star Grass (July 1972 through March 1973, Turrialba) – Activity III.T.1813.
74. The Effect of Amount and Frequency of Nitrogen Application, on the Cutting Frequency and Height and on the Productivity of Pangola Grass (July 1972 through March 1973, Turrialba) – Activity III.T.1814.
75. The Effect of Different Management Systems on the Productivity of a Star Grass Pasture (November 1972 through June 1973, Turrialba) – Activity III.T.1815.
76. The Evaluation of Soil Fertility in Pastures under Different Management Systems (January through June 1973, Turrialba) – Activity III.T.1816.
77. Comparison of Management Systems on Milk Production (September 1972 through June 1973, Turrialba) – Activity III.T.1817.
78. The Effect of Plant Age on the Chemical Composition and Digestibility *in vitro* of the *Hemarthris altissima* grass (January through June 1973, Turrialba) – Activity III.T.1818.
79. The Effect of Nitrogen dosage, Height and Cutting Frequency on Bermuda Grass Cross No. 1 (January through June 1973, Turrialba) – Activity III.T.1819.
80. The Effect of Nitrogen dosage, Height and Cutting Frequency on Guinea Embu Grass (*Panicum maximum* Jacq.) (January through June 1973, Turrialba) – Activity III.T.1820.
81. The Introduction of New Legume Species to the Introduction Garden (July 1972 through June 1973, Turrialba) – Activity III.T.1822.
82. Study of the Germination Problems in Legumes in the Tropics (July through December 1972, Turrialba) – Activity III.T.1823.
83. The Establishment of Legumes in Star Grass (*Cynodon plectostachyus*) Pastures (July 1972 through January 1973, Turrialba) – Activity III.T.1824.
84. The Establishment of Legumes by Seed in Already Established Pastures (September 1972 through June 1973, Turrialba) – Activity III.T.1825.
85. Study of the Yield and Botanical Composition of Grass–Legume Mixtures (July 1972 through January 1973, Turrialba) – Activity III.T.1826.
86. Forage Productivity of Grass–Legume Mixtures (July 1972 through June 1973, Turrialba) – Activity III.T.1827.
87. The Effect of Different Management Systems on the Productivity of a Star Grass Pasture (July 1972 through June 1973, Turrialba) – Activity III.T.1828.
88. The Effect of Frequency and Cutting Heights of *Desmodium intortum* on the Organic Reserve Levels and on Production (January through June 1973, Turrialba) – Activity III.T.1829.
89. The Effect of Nutritional Elements on the Modulation of *Vigna hosei* (July through December 1972, Turrialba) – Activity III.T.1821.
90. Identification and Quantification of Production Problems in the Dairy Herds of Individual Farmers (July 1972 through June 1973, Turrialba) – Activity III.T.1911.
91. The Use of Paternity Registers in the Selection of Dairy Cattle (July 1972 through June 1973, Turrialba) – Activity III.T.1912.
92. Development of Adjustment Constants for Age, in the Selection of Milking Cattle (July 1972 through June 1973, Turrialba) – Activity III.T.1913.
93. Development and Evaluation of Fertility Indices in Dairy Herds (July 1972 through June 1973, Turrialba) – Activity III.T.1914.
94. The Evaluation of Production Costs of Replacement Heifers for Dairy Herds (July 1972 through June 1973, Turrialba) – Activity III.T.1915.

95. The Effect of Weaning Age on the Later Reproductive Behavior of the Mothers (July 1972 through June 1973, Turrialba) – Activity III.T.1916.
96. The Effect of Weaning Age on the Calf's Post-weaning Growth (July 1972 through June 1973, Turrialba) – Activity III.T.1917.
97. The Effect of Servicing Time (in Estro) on the Conception of Brahman, Criollo and Romo Sinuano Cows (July 1972 through June 1973, Turrialba) – Activity III.T.1918.
98. A Comparison of Milk Production in Pure and Cross Breeds (July 1972 through June 1973, Turrialba) – Activity III.T.1921.
99. A Comparison of the Reproductive Behavior of Pure and Cross Breeds in Dairy Cattle (July 1972 through June 1973, Turrialba) – Activity III.T.1922.
100. Survival Comparison between Pure and Cross Breed Dairy Cattle (July 1972 through June 1973, Turrialba) – Activity III.T.1923.
101. Comparison of Dairy Cattle Pure and Halfbreed Bulls, based on Progeny (July 1972 through June 1973, Turrialba) – Activity III.T.1924.
102. Birth and Weaning Weights of Reciprocal Brahman and Criollo Cross Calves (July 1972 through June 1973, Turrialba) – Activity III.T.1925.
103. Birth and Weaning Weights of Calves with Brahman–Criollo Mothers and Charolais Fathers (July 1972 through June 1973, Turrialba) – Activity III.T.1926.
104. Weight of Weaned Calves, per Bred Cow in the Brahman and Criollo Breeds, and the Reciprocal Brahman–Criollo Crosses (July 1972 through June 1973, Turrialba) – Activity III.T.1927.
3. Advisory and Technical Assistance Services Provided the Forestry Sectors of Costa Rica, Guatemala, El Salvador, Nicaragua, Haiti and the Dominican Republic (July 1972 through June 1973, Turrialba and San Jose) – Activity IV.T.114.
4. Shipments of Forest Seed and Instruction Information on Nursery Techniques to Latin American Countries, by the Latin America Forestry Seed Bank (July 1972 through June 1973, Turrialba) – Activity IV.T.118.
5. Research on the Treatment and Utilization of Tropical Woods (July 1972 through June 1973, San Jose) – Activity IV.T.119.
6. Training of Personnel in the Bean Program (August 1972 through March 1973, Turrialba) – Activity IV.N.125.
7. Conference of Bean Production Technology for Technical Personnel of the Agricultural Center of Cartago (September 14, 1972, Cartago, C.R.) – Activity IV.T.1131.
8. Planting of Experimental Forests with Valuable Species under Two Different Situations (Conditions) in Costa Rica (August 1972 through June 1973, Guanacaste, C.R.) – Activity IV.T.1141.
9. Participation in the Meeting of the Management Program for Rural Development (12–14 July 1972, San Jose).
10. Cooperation with the University of Costa Rica on the Utilization of the IICA–University of Costa Rica Contract (September 1972, San Jose) – Activity IV.T.1114.1.
11. Seminar on the Establishing of an Emergency Program for the Management of Pastures and Cattle in the Dry Pacific Area of Costa Rica (August 1972, Liberia, C.R.) – Activity IV.T.1114.2.
12. Technical Cooperation provided the National Pastures and Forages Commission (August 1972 through May 1973, Turrialba and San Jose) – Activity IV.T.1114.3.
13. Participation on the National Commission for the Development of Animal Husbandry in Costa Rica (July 1972 through June 1973, San Jose) – Activity IV.T.1114.4.
14. Cooperation to the Regional Center of San Carlos on the Development of a Dairy Calves Rearing Project (April 1973, San Carlos, C.R.).

#### **Line IV. Promotion of Agricultural Production**

1. The Production of Seed or Vegetative Material from Improved Cultivars of Coffee, Cacao, Beans and Macadamia for Promotion Programs in Several Countries (July 1972 through June 1973, Turrialba) – Activity IV.T.111.
2. Technical Advisory Services Provided National Institutions on Research Matters (5–18 May 1973, San Jose) – Activity IV.T.113.

## Line V. Multinational Integration

1. The Study and Preparation of External Aid Projects (July 1972 through June 1973, Turrialba).

## Line VI. Promotion and the Carrying Out of Structural Changes

1. National Seminar on Agrarian Reform for ITCO Functionaries (17 July through 8 August 1972, San Jose) – Activity VI.N.156a.
2. Agrarian Reform Seminar for Cattlemen (19–20 July, 1972, San Jose) – Activity VI.N.157a.
3. Advisory Services Provided National Agrarian Reform Organisms on the Elaboration of Plans, Programs and Projects (July 1972 through June 1973, Central America) – Activity VI.N.159.
4. Participation in the VI Meeting of the Regional Inter-American Working Group on Community Development (23–29 July 1972, San Jose).
5. Participation in the Internal Seminar on Agrarian Reform and Operational Models for Rural Development in Latin America (13–16 March 1973, San Jose).

## Line VII. Administration of Agricultural Policies

1. Collaboration on the Costa Rica PEPA Course (Theme: Economic Efficiency Elements) (2–9 October 1972, San Jose) – Activity VII.N.111.
2. Collaboration on the Costa Rica PEPA Course (Theme: Writing Up a Project) (24–27 October 1972, San Jose) – Activity VII.N.111.
3. National PEPA Course Cycle in Costa Rica (July 1972 through June 1973) – Activity VII.N.111.
4. Trimestral Bulletin 'Development of the American Tropics' (July–September 1972, Turrialba) – Activity VII.S.213.
5. Publication of Selected Bibliographies (October 1972, Turrialba) – Activity VII.S.214.
6. Publication of Documents from the Executive Secretariat of the IICA–TROPICS Program (July 1972 through June 1973, Turrialba) – Activity VII.S.215.

## DOMINICAN REPUBLIC

### Line II. Agricultural Education

1. Preparation of the Seminar on Agricultural Education for Rural Development in the Dominican Republic (10–14 May 1973) – Activity II.L.113.
2. Course on Agricultural Extension Methodology (22 January through 31 March 1973).

### Line III. Agricultural Research

1. Advisory Services and Technical Assistance to the Dominican Republic (17–27 August 1972, Santo Domingo) – Activity III.L.131.
2. Technical Meeting on Agriculture and Cattle Statistics and Programming (2–10 November 1972, Santo Domingo).

### Line IV. Promotion of Agricultural Production

1. Advisory Services to the Cacao Research Program (10–23 December 1972) – Activity IV.T.1132.
2. Promotion towards the Creation of a National Pulses Program for the Dominican Republic (31 January through 2 February 1973) – Activity IV.L.121.

### Line VI. Promotion and Carrying Out of Structural Changes

1. Two Short Courses for Agrarian Reform Settlement Administrators and One for IAD Executives (17 July through 9 September 1972, San Cristobal and Santo Domingo) – Activity VI.C.125.
2. Support and Coordination of Agrarian Laws in the Dominican Republic (3–21 December 1972).

## ECUADOR

### Line I. Analysis and Information on Rural Development

1. Participation in the II Meeting of Agricultural Librarians of Ecuador (6–9 June 1973, Guayaquil) – Activity I.D.127.
2. Advisory Services provided the Agriculture Documentation Center in Ecuador (3–6 June 1973, Quito) – Activity I.A.222.
3. Session on Agricultural Communication (18 January 1973, Quito) – Activity I.A.225.

## **Line II. Agricultural Education**

1. Course on University Teaching Methodology (14–25 August 1972, Quito) – Activity II.A.266.

## **Line IV. Promotion of Agricultural Production**

1. Research on the National Services for Agriculture Commercialization (July through December 1972, Quito) – Activity IV.A.121.
2. Advisory Services on Commercialization, provided the Ministry of Agriculture and Livestock (1 July 1972 through 30 June 1973, Quito) – Activity IV.A.122.

## **Line VII. Administration of Agricultural Policy**

1. Advisory Services in Institutional Administration, provided the Ministry of Agriculture (1 July 1972 through 30 June 1973, Quito) – Activity VII.A.231.

## **EL SALVADOR**

### **Line I. Analysis and Information on Rural Development**

1. A Study on Basic Information for Rural and Institutional Analysis (September 1972 through June 1973, San Salvador) – Activity I.N.121.
2. Collaboration in Training on Scientific Communication (27–28 July 1972, San Salvador) – Activity I.D.213.

### **Line III. Agricultural Research**

1. Evaluation of the Nitrogen and Phosphorus Needs of Sorghum in the Northern Zone of El Salvador (1 July 1972 through 30 June 1973, El Salvador) – Activity III.
2. Collection of Genetic Material (November 1972) – Activity III.N.317.

### **Line IV. Promotion of Agricultural Production**

1. Technical Assistance to the Salvador Bean Program (8–11 May 1973, San Salvador) – Activity IV.T.112.

2. Advisory Services provided on Physical–Biological Research (1 July 1972 through 30 June 1973) – Activity IV.N.121.

3. Advisory Services provided on the Increase of Improved Bean Seed (August 1972 through January 1973) – Activity IV.N.123.

4. Evaluation of the Efficiency of the Bean Program (May 1973) – Activity IV.N.124.

5. Advisory Services to the Pastures Program of the National Agricultural Technology Center (CENTA) and to the Regional Program of Pastures and Forages (7–9 August 1972, San Salvador).

### **Line VI. Promotion and Carrying Out of Structural Changes**

1. Advisory Services on the Implementation of the Agrarian Reform Program (1972 through 1973, San Salvador) – Activity VI.N.133.

2. VII Regular Meeting of Agrarian Reform Executives of the Central American Isthmus (27 November through 1 December 1972, San Salvador) – Activity VI.N.153.

## **GUATEMALA**

### **Line I. Analysis and Information on Rural Development**

1. Publication of Information Bulletins (1 July 1972 through 30 June 1973) – Activity I.N.211.

2. Newspaper, Radio and Television Information (1 July 1972 through 30 June 1973, Guatemala) – Activity I.N.212.

3. Distribution of Publications (1 July 1972 through 30 June 1973, Guatemala) – Activity I.N.213.

4. Publication and Editorial Services (1 July 1972 through 30 June 1973, Guatemala) – Activity I.N.215.

5. Coordination and Advisory Services provided Research and Agricultural Extension Units (8–9 February 1973, Guatemala) – Activity I.N.223.

6. Intensive Short Course on Technical Writing (3–7 July 1972).

7. Talk on the Orientation of Communications in the Rural Area (2 August 1972).
8. Seminar on Communications for Instructors of Rural Promoters (28–30 August 1972).
9. National and International Institutions Related with the Agricultural Field in Guatemala (December 1972).
10. Directory of Guatemalans and Residents in Guatemala that have Graduated from the Escuela Agrícola Panamericana 1946–71 (October–December 1972).
11. Directory of El Salvador Graduates from the Escuela Agrícola Panamericana and other Institutions related to the Field of Agriculture (October–December 1972).

## **Line II. Agricultural Education**

1. Collaboration on the Intensive Soil Conservation Course (15–30 March 1973, Guatemala) – Activity II.N.124.
2. Regional Seminar on Horticulture, with Enfasis in Olericulture (8–17 April 1973, Guatemala) – Activity II.N.125.
3. International Seminar on Evaluation (19–25 November 1972, Guatemala) – Activity II.N.231.
4. Diagnostic Study of the Agricultural High Schools of Central America (September 1972 through June 1973) – Activity II.N.233.
5. Short Course on Agricultural Machinery (23–28 October 1972) – Activity II.N.234.
6. Course on Teaching Methodology in the Agricultural Sciences (15–20 January 1973, Guatemala) – Activity II.N.236.

## **Line III. Agricultural Research**

1. Advisory Services provided on the Coordination of Activities within the National Cattle Development Plan (1 July 1972 through 30 June 1973) – Activity III.N.131.

2. Collaboration on Studies and Evaluation of Pastures Systems and Animal Production Infrastructures (1 July 1972 through 30 June 1973) – Activity III.N.132.
3. Short Course on the Production and Utilization of Forages (6–10 November 1972, Guatemala) – Activity III.N.133.
4. Technical Revision of the Document “Inventory of Fauna Resources of Guatemala” (3–7 July 1972).
5. Collaboration on the “Production and Utilization of Beans” Course (6 July 1972, Jutiapa).

## **Line IV. Promotion of Agricultural Production**

1. Evaluation of Experimental Plots in El Peten and Determination of Work Plans (July through August 1972, El Peten) – Activity IV.T.1142.
2. Technical and Editorial Revision of Revised Practical Works Produced during the PEPA Cycle in Honduras (June–September 1972).

## **Line VI. Promotion and Carrying Out of Structural Changes**

1. Advisory Services provided SIECA on Regionalization and Zoning Studies (July 1972 through June 1973, Guatemala) – Activity V.N.111.
2. Elaboration of Manual for the Utilization of Regionalization and Zoning Studies of Central America (July 1972 through June 1973, Guatemala) – Activity V.N.113.
3. Central American Workshop on the Development of Agricultural Cooperatives (13–17 November 1972).

## **Line VII. Administration of Agricultural Policy**

1. Technical International Meeting on Social Variables in the Rural Development Planning (18–22 June 1973, Guatemala) – Activity VII.N.121.
2. Short Course on Techniques of Agricultural Supervision (14–16 February 1973) – Activity VII.151.



3. Advisory Services provided the Sectorial Unit of Agricultural Planning (1 July 1972 through 30 June 1973, Guatemala) – Activity VII.N.152.

#### HAITI

##### Line I. Analysis and Information on Rural Development

1. Advisory Services provided on the Creation of a National Center of Agricultural Documentation in Haiti (29–31 January 1973, Port-au-Prince) – Activity I.D.114.

##### Line II. Agricultural Education

1. Practical Course on Animal and Pastures Production.

##### Line III. Agricultural Research

1. Advisory Services and Technical Assistance (27–30 August 1972, Port-au-Prince) – Activity III.L.131.

##### Line IV. Promotion of Agricultural Production

1. National Course for Field Agents of the National Promotion of Pulses Program in Haiti (13–31 January 1973) – Activity IV.L.143.
2. Collaboration in Advisory Services provided the Organization for the Development of the Gonaives Plain (ODPG) Pilot Project (10 February through 30 May 1973, Port-au-Prince).
3. Advisory Services provided on the Implementation of the Quinquennial Plan for the Development of Coffee in Haiti (25–31 July 1972) – Activity IV.L.151.

#### HONDURAS

##### Line I. Analysis and Information on Rural Development

1. Basic Information Study on the Rural and Institutional Analysis of Honduras (February–June 1973, Tegucigalpa) – Activity I.N.141.
2. Collaboration on the National Extension & Communications Course (27–28 March 1973, Comayagua) – Activity I.N.223.

##### Line II. Agricultural Education

1. National Seminar on Agricultural Mechanization (10–16 June 1973, La Ceiba) – Activity II.N.126.
2. Short Course on Teaching Methodology in Agricultural Sciences (5–10 March 1973, El Zamorano) – Activity II.N.232.

##### Line III. Agricultural Research

1. Advisory Services provided on the Programming, Supervision and Evaluation of Research at a National Level and in Coordination with the Regional Program (26–28 September 1972, Tegucigalpa) – Activity III.N.212.

##### Line IV. Promotion of Agricultural Production

1. Evaluation and Advisory Services in National Programs of Production and Utilization of Forages (2 January through 2 February 1973, Tegucigalpa) – Activity IV.N.131.

##### Line VII. Administration of Agricultural Policy

1. Social Diagnosis of the Valley of Guayape for the Integral Development Program of the Valley (February through May 1973, Tegucigalpa and Olancho) – Activity VII.N.43.
2. Training Cycle on the Preparation and Evaluation of Agricultural Development Projects (1 July 1971 through 30 August 1972, Honduras) – Activity VII.N.111.
3. Advisory Services provided the Higher Planning Council (October 1972 through April 1973, Tegucigalpa) – Activity VII.N.141.
4. Advisory Services provided the National Research and Agricultural Extension Plan in Honduras (26 March through 13 April 1973, Comayagua) – Activity VII.N.142.
5. Social Diagnosis of the Valley of Guayape for the Integral Development Program of the Valley (February through May 1973, Honduras) – Activity VII.N.143.

#### JAMAICA

##### Line IV. Promotion of Agricultural Production

1. Advisory Services provided the Government of Jamaica on Coffee Problems (23–24 November 1972) – Activity IV.T.112.2.

## MEXICO

### Line I. Analysis and Information of Rural Development

1. Basic Information Study on Rural and Institutional Analysis of Mexico (1 July 1972 through 30 June 1973, Mexico) – Activity I.N.151.
2. Strengthening of Tropical Region of the ASHS (November 1972 through June 1973, Federal District) – Activity I.N.153.
3. Participation in the Latin American Seminar for the Formation of Information Scientists (FID/CLA) (23–25 August 1972, Federal District) – Activity I.D.214.
4. Coordination of the Miscellaneous Publication Series (July through November 1972, Mexico) – Activity I.N.217.
5. Editorial Work of the Office in Mexico (July 1972 through June 1973) – Activity I.N.218.
6. Training at Postgraduate Level in Agricultural Information (1 February 1972 through 30 December 1973, Mexico) – Activity I.N.224.
7. In-service Training on Technical Communications (22 June 1972 through 14 September 1972) – Activity I.N.225A.
8. In-service Training in Communications (14 August through 14 October 1972, Mexico) – Activity I.N.225B.
9. Support on the Organization of the V World Congress and a National Course with Specialization in Agricultural Libraries (2–4 April 1973, Federal District).

### Line II. Agricultural Education

1. Course on Teaching Methodology in Agricultural Sciences (14–19 August 1972, Saltillo, Coahuila) – Activity II.N.113.
2. Course on Teaching Methodology in Agricultural Sciences (18–22 September 1972, Uruapan, Mich.) – Activity II.N.114.
3. Short Course on Technical Writing (9–13 October 1972, Cd. Victoria, Tamaulipas) – Activity II.N.115.

4. Course on Teaching Methodology in Agricultural Sciences (24–28 July 1972, Cardenas, Tabasco) – Activity II.N.116.
5. Course on University Teaching Methodology (26–30 March 1973, Cd. Victoria, Tamaulipas) – Activity II.N.117.
6. In-service Training of Two Professors (12 September through 12 November 1972) – Activity II.N.123.
7. Advisory Services provided the Faculty of Agronomy of Nuevo Leon (19–23 October 1972, Nuevo Leon) – Activity II.N.211.
8. Advisory Services provided the Graduate College of Saltillo (9–18 October 1972, Saltillo, Coah.) – Activity II.N.212.
9. Advisory Services provided the Mexican Association of Higher Agricultural Education (AMEAS) (25–27 September 1972, Mexico City) – Activity II.N.213.
10. Seminar on the Administration and Evaluation of Secondary Agricultural Education (12–16 February 1973, Tizimin, Yucatan) – Activity II.N.222.
11. Teaching Methodology Course in the Agricultural Sciences (2–6 April 1973, Huejutla, Hidalgo) – Activity II.N.223.

### Line III. Agricultural Research

1. Collaboration on the Programming and Supervision of Animal Husbandry Research (1 July 1972 through 30 June 1973, Saltillo, Coah.) – Activity III.N.141.
2. Advisory Services provided on the Coordination of Animal Husbandry Research and Extension (1 July 1972 through 30 June 1973, Saltillo, Coah.) – Activity III.N.142.
3. Short Course on Pastures Management (Northern Arid Zones of Mexico) (6–17 November 1972) – Activity III.N.143.
4. Animal Production Seminar (13–14 December 1972, Piedras Negras, Coah.) – Activity III.N.144.

#### **Line IV. Promotion of Agricultural Production**

1. Advisory Services provided on the Integral Programming of Extension and Campesino Organization Activities (September 1972 through June 1973, Saltillo, Coah.) – Activity IV.N.111.
2. Seminar on Education in Animal Husbandry (25–29 June, 1973, Guadalajara, Jalisco) – Activity IV.N.112.
3. Participation in the IV Meeting of the Latin American Association of Animal Production (ALPA) (25–30 June 1973, Guadalajara).

#### **Line VI. Promotion and Carrying Out of Structural Changes**

1. Advisory Services provided the Campesino Productivity Program (July 1972 through June 1973) – Activity VI.N.111.
2. Study of the Current Situation in Campesino Organization (June through December 1972) – Activity VI.N.114.
3. Study of Individual Cases of Campesino Organization (April through June 1973) – Activity VI.N.115.
4. Advisory Services provided on Campesino Organization and Agricultural Extension in the Arid Zones (August 1972 through June 1973) – Activity VI.N.116.
5. Reciprocal Training in Agrarian Reform (April through October 1972, Mexico) – Activity VI.N.154.

#### **Line VII. Administration of Agricultural Policy**

1. Advisory Services and Collaboration provided on the Agricultural Sector Planning in Mexico (April through June 1973) – Activity VII.N.123.

### **NICARAGUA**

#### **Line II. Agricultural Education**

1. International Course on Animal Production (7–12 May 1973, Rivas) – Activity II.N.235.
2. Coordination of Cooperative Program CSUCA/ROCAP/CAAM/IICA (10–14 July 1972 through 30–31 October 1972) – Activity II.N.312.

3. Participation in Regional Seminar on Basic Sciences (10–11 July 1972, Managua).

#### **Line IV. Promotion of Agricultural Production**

1. Forest Feasibility Studies on the Rio Escondido Project (July 1972 through June 1973, Managua) – Activity IV.T.115.
2. Collaboration on the Pastures and Forage Program and Advisory Services provided on the "Introduction Garden" Plan (August 9–10, 1972).

#### **Line VI. Promotion and Carrying Out of Structural Changes**

1. Institutional Diagnosis of Agrarian Reform in Nicaragua (24 August through 31 December 1972) – Activity VI.C.124.
2. Collaboration in the Course on Thematic Research and Farm Organization (7–26 August 1972, Managua) – Activity VI.N.156.
3. Living Laboratory on Human Conduct for Employees of the Agrarian Institute of Nicaragua (14–22 August 1972, Managua) – Activity VI.N.157.

#### **Line VII. Administration of Agricultural Policy**

1. Advisory Services provided the National Teaching and Research Plan (December 1972 through January 1973, Managua) – Activity VII.N.161.
2. Advisory Services provided the Ministry of Agriculture and Livestock and the Planning Office on Diagnosis and Sectorial Planning (1 July 1972 through 30 June 1973, Nicaragua) – Activity VII.N.162.
3. Advisory Services provided the Cadastral Service on its Regional Planning Program (1 July 1972 through 30 June 1973, Nicaragua) – Activity VII.N.163.

### **PANAMA**

#### **Line I. Analysis and Information on Rural Development**

1. Zoning and Diagnosis of Bovines (1 July 1972 through 30 June 1973).

## **Line II. Agricultural Education**

1. Advisory Services provided the Central American Association of Secondary Agricultural Education (ACEAS) (5-8 February 1973, Panama) - Activity II.N.313.

## **Line III. Agricultural Research**

1. Advisory Services provided the Pastures and Forage Program of Panama (1 July 1972 through 30 June 1973) - Activity III.N.121.
2. III International Meeting on the Production and Utilization of Forages (14-17 March 1973, Boquete, Chiriqui) - Activity III.N.211.

## **Line IV. Promotion of Agricultural Production**

1. Technical Cooperation provided the Pastures Program MAG-FAO (Panama) (16-19 August, 1972 - Activity IV.T.1110.
2. Participation at the III International Meeting on the Production and Utilization of Forages (14-17 March, 1973) - Activity IV.T.1112.
3. Advisory Services provided the Ministry of Agricultural Development in the Structuring and Organization of the Agricultural Development Bank in Panama (7-16 February 1973).

## **Line VI. Promotion and Carrying Out of Structural Changes**

1. In-service Training to the Production and Social Coordinators of the Agrarian Reform Commission (17-29 July 1972, David, Chiriqui) - Activity VI.N.12.
2. Inter-American Course on Community Enterprises (7 May through 1 June 1973, Capira) - Activity VI.C.113.
3. Elaboration of Settlements Operation Manuals (October 1972) - Activity VI.N.124.
4. Elaboration of a Rural Administration Manual (19-26 October 1972) - Activity VI.N.124a.
5. Seminar on the Use of Manuals on Pastures (17-28 July 1972, David) - Activity VI.N.125.
6. Social Diagnosis of Settlements (6-20 December 1972) - Activity VI.N.127.

7. FAO/IICA Studies on Community Enterprises Cases (2-14 April 1973).

## **Line VII. Administration of Agricultural Policy**

1. Advisory Services provided on the Promotion Plan for National Production: 1973-74 (July 1972 through June 1973) - Activity VII.N.133.

## **PARAGUAY**

### **Line I. Analysis and Information on Rural Development**

1. Current Situation and Tendencies of the Agricultural and Cattle Sector of Paraguay (1 July 1972 through 30 June 1973, Asuncion) - Activity I.S.151.
2. Register of Institutions with Responsibilities in the Rural Development of Paraguay (1 July 1972 through 30 June 1973, Asuncion) - Activity I.S.152.
3. Revision and Up-Dating of the Analysis of Rural Welfare Institutes (June 1973, Asuncion) - Activity I.S.173.

### **Line II. Agricultural Education**

1. Improvement of Pedagogical Capacity of Professors (18-30 June 1973, San Lorenzo) - Activity II.S.251.
2. Collaboration in the Didactic Training Course for Professors of Agricultural Teaching at an Intermediary Level (21-25 May 1973, Asuncion) - Activity II.S.256.
3. Advisory Services and Aid Provided the Faculty of Agronomy and Veterinary Sciences of the National University of Asuncion (August through October 1972, San Lorenzo) - Activity II.S.311.
4. Advisory Services provided the Extension Service in Programming, Execution and Evaluation of the Work on Extension (1 July 1972 through 30 June 1973, San Lorenzo) - Activity II.S.312.
5. Advisory Services provided the Teaching Staff responsible for Extension and Rural Sociology in the Organization and Implementation of the Course (July through December 1972, San Lorenzo) - Activity II.S.324.

6. Advisory Services provided and Participation in the National Seminar on Agriculture and Cattle Extension in Rural Development (12–16 March 1973, Asuncion) – Activity II.S.325.

### **Line III. Agricultural Research**

1. Advisory Services provided the Tobacco Program (18–27 July 1972, Asuncion) – Activity III.S.224.
2. Advisory Services provided the Soybean Program (1–15 April 1973, Asuncion) – Activity III.S.225.
3. Advisory Services provided the Program on Research in Cattle Breeding (2–9 May 1973, Asuncion) – Activity III.S.227.
4. Advisory Services provided the Program on the Economic Analysis of Agricultural Research (2–7 October 1972, Asuncion) – Activity III.S.229.

### **Line IV. Promotion of Agricultural Production**

1. Training in Agricultural Credit (24–27 April 1973, Asuncion) – Activity IV.S.152.
2. Selection of Candidates – Graduate Course in Agricultural Economics (July 1972 through March 1973, Asuncion) – Activity IV.S.154.

### **Line VI. Promotion and Carrying Out of Structural Changes**

1. Advisory Services provided the Rural Development Project of the Eje Este Colonies (1 July 1972 through 30 June 1973, Asuncion and Eje Este Colonies) – Activity VI.S.141.
2. Advisory Services and Training provided in Farm Organization in the Development of the Eje Este Colonies Project (1 July 1972 through 30 June 1973, Asuncion and Eje Este Colonies) – Activity VI.S.142.
3. Training Course for Promoters of the Development of Eje Este Colonies Project (25 June through 3 July 1973, Gral. Stroessner Colony) – Activity VI.S.147.
4. Training of Ex–Social Service School Students in the Development of Farm Organization (July through December 1972, Asuncion) – Activity VI.S.148.

5. Collaboration and Advisory Services provided the Course on Community Development of the Social Service School (April 1972, Asuncion) – Activity VI.S.149.

6. Participation in the Seminar on Children's Nutrition and the Family (28 May through 2 June 1973, Asuncion) – Activity VI.S.151.

### **Line VII. Administration of Agricultural Policy**

1. Advisory Services provided the Technical Planning Secretariat of Paraguay on the Implementation of Evaluation Scheme of PIDAP (May 1973, Asuncion) – Activity VII.S.131.
2. Advisory Services on Strengthening the Economy of the Department of Agriculture of the Ministry of Agriculture (October 1972 through June 1973, Asuncion) – Activity VII.S.132.
3. Training Personnel in Agricultural Economy and Planning (May 1973, Asuncion) – Activity VII.S.133.

## **PERU**

### **Line I. Analysis and Information on Rural Development**

1. Up–Dating Information on the Evolution of Agriculture and the Agricultural Institutions of Peru (April through June 1973, Lima) – Activity I.A.141.
2. Bulletin of the Andean Zone (1 July 1972 through 30 June 1973, Lima) – Activity I.A.211a.
3. Services to the Countries 1972 (1 July 1972 through 30 June 1973, Lima) – Activity I.A.211b.
4. Advisory Services on the Development of a National Course on Agricultural Libraries (8–10 May 1973, Lima) – Activity I.D.228.
5. Talk on Agricultural Communication and Audio-visual Aids (15–16 February 1973, Cuzco).

### **Line II. Agricultural Education**

1. Third Cycle of the Graduate Course on Animal Production, by Stages (April through July 1973, Lima) – Activity II.A.111.



2. Advisory Services provided the National Agrarian University, as a Regional Center (1 July 1972 through 30 June 1973, Lima) – Activity II.A.112.
3. Annual Meeting of APIEAS (25–27 June 1973, Lima) – Activity II.A.241.
4. Study of the Higher Agricultural Education of Peru (1 July 1972 through 30 June 1973) – Activity II.A.242.
5. Course on University Teaching Methodology (15–26 January 1973, Cuzco) – Activity II.A.264.
6. Course on University Teaching Methodology (19–31 March, 1973, Cajamarca) – Activity II.A.265.
7. Course on Teaching Methodology in Support of CENCIRA (3–14 July 1972, Lima) – Activity II.A.267.
8. Course on Teaching Methodology for Higher Public Administration Education School (ESAP) (28–29 September 1972, Lima) – Activity II.A.269.
9. I Seminar of Forestry Professors of the Andean Zone (18–22 December 1972, Lima) – Activity II.A.276.

### Line III. Agricultural Research

1. Regional Seminar on Negotiations for Agricultural Research Centers (7–11 May 1973, Lima) – Activity III.A.111.

### Line IV. Promotion of Agricultural Production

1. Technical Participation in the First Seminar of Forestry Professors of the Andean Zone (18–22 December 1972, Lima) – Activity IV.T.114.
2. Advisory Services provided the Ministry of Agriculture in Marketing Matters (July 1972 through June 1973, Lima) – Activity IV.A.131.
3. First Course on Agricultural Marketing at the PIAR Level (25 October 1972 through 8 November 1972, Chimbote, Trujillo) – Activity IV.A.132.
4. Collaboration to CENCIRA on Marketing in the Integral Projects for Rural Settlements (June through December 1972, Lima) – Activity IV.A.134.

5. First Meeting of the Advisory Commission of the Irrigation Program (16–21 August 1972, Lima) – Activity IV.S.411.
6. First National Course on the Operation, Conservation and Development of Irrigation Districts (21 August through 26 September 1972, Lima) – Activity IV.S.412.
7. International Exchange of Technicians (14 January through 28 April 1973) – Activity IV.S.413.

### Line VI. Promotion and Carrying out of Structural Changes

1. Advisory Services to CENCIRA in Farm Training Methods (8–16 May 1973, Lima) – Activity VI.A.243.
2. Advisory Services provided the Training Division of the National Support System for Social Mobilization on Adult Training Methodology (20–23 March 1973, Lima) – Activity VI.A.244.
3. Advisory Services provided the National Institute of Tele-education in Thematic Research methods Applied to Communication (20–23 May 1973, Lima) – Activity VI.A.245.

### Line VII. Administration of Agricultural Policy

1. Support to the Course on the Preparation and Evaluation of Agricultural Projects (1 August 1972 through 26 May 1973, Lima) – Activity VII.A.131.
2. Regional Seminar on the Administration of Higher Agricultural Education Institutions (15–19 January 1973, Lima) – Activity VII.A.211.
3. IV Meeting of the Advisory Commission of the IICA–TROPICS Program (21–26 May 1973, Lima) – Activity VII.A.252.

## UNITED STATES

### Line I. Analysis and Information on Rural Development

1. Coordination Visit to the National Agricultural Library (27–31 October 1972, Washington) – Activity I.D.133.
2. Participation in the Simularion Library Working Conference (29–30 March 1973, Lassing, Michigan) – Activity I.D.225.

3. Participation in the 35th Meeting of the American Society for Information Science (23–26 October 1972, Washington) – Activity I.D.226.

### **Line III. Agricultural Research**

1. Participation in the Second World Conference on National Parks (21–27 September 1973).

### **Line IV. Promotion of Agricultural Production**

1. Participation in the VIII Meeting of the Inter-American Commission of Nuclear Energy (12–14 July 1972, San Juan, Puerto Rico) – Activity IV.T.1117.
2. Participation in the American Dairy Science Association Meeting (ADSA) and the American Society of Animal Science (ASAS) Meeting (25 July through 2 August, 1972, Blacksburg, Virginia).

## **URUGUAY**

### **Line I. Analysis and Information on Rural Development**

1. Elaboration of Methodologies for the Analysis of Rural Development (1 July 1972 through 30 June 1973, Montevideo) – Activity I.S.111.
2. Consolidation of Information on the Current Situation and Tendencies of the Agricultural Sector of the Southern Zone (June 1973, Montevideo) – Activity I.S.112.
3. Current Situation and Tendencies of the Agricultural Sector in Uruguay (July 1972 through April 1973, Montevideo) – Activity I.S.161.
4. Register of Institutions with Responsibilities in Rural Development in Uruguay (1 July 1972 through 30 June 1973, Montevideo) – Activity I.S.162.
5. Analysis of the National Institute of Colonization of Uruguay (September 1972 through April 1973, Montevideo) – Activity I.S.174.
6. Meeting with the Affiliated Committee of AIBDA (8 January 1973, Montevideo) – Activity I.D.234.

7. Advisory Services provided on the Operation of Irrigation Areas of the National Colonization Institute (11 October 1972 through 30 June 1973, Montevideo) – Activity I.S.445.

### **Line II. Agricultural Education**

1. Improvement of Pedagogical Capacity of Professors (11–13 June 1973, Montevideo) – Activity II.S.261.
2. Academic Improvement of Professors (1 July 1972 through 30 June 1973, Montevideo) – Activity II.S.262.
3. Advisory Services provided the Faculties of Agronomy and Veterinary Sciences of the University of the Republic of Uruguay (1 July 1972 through 30 June 1973, Montevideo) – Activity II.S.265.

### **Line III. Agricultural Research**

1. Compiling and Distribution of Research Information (July 1972 through March 1973, Montevideo) – Activity III.S.132.
2. Advisory Services provided on the Registration and Economic Analysis of a Field Test of a Beef Cattle Raising System (July 1972 through March 1973, Colonia) – Activity III.S.251.
3. Advisory Services provided on the Registration and Economic Analysis of a Test of a Mixed Agriculture Cattle System (Bovines) (July 1972 through March 1973, Colonia) – Activity III.S.252.
4. Advisory Services on the Registration and Economic Analysis of a Test System for Raising Young Bulls (July 1972 through March 1973, Colonia) – Activity III.S.253.
5. Advisory Services provided on Studies of Prices, Expenses and Costs (July 1972 through March 1973, Colonia) – Activity III.S.321.
6. Advisory Services provided on Obtaining Information on Animal Husbandry (July 1972 through March 1973, Estanzuela, Colonia) – Activity III.S.322.
7. In-service Training on Obtaining Socio-economic Information (1 July 1972 through 30 June 1973, Estanzuela, Colonia) – Activity III.S.323.

#### **Line IV. Promotion of Agricultural Production**

1. National Course on the Operation and Conservation of Irrigation Systems (9–21 October 1972, Montevideo) – Activity IV.S.442.
2. Advisory Services provided on Agro–economic Productivity Studies (October 1972 through June 1973, Montevideo) – Activity IV.S.161.
3. Advisory Services and Training provided in Agro–economic Studies (1 July 1972 through 30 June 1973, Montevideo) – Activity IV.S.312.
4. Advisory Services on the Revision of Regulations for Irrigation Systems (30 April through 30 June 1973, Montevideo) – Activity IV.S.443.
5. Support to Participants in Graduate Courses in Agricultural Economy (September 1972 through March 1973, Montevideo) – Activity IV.S.163.
6. Elaboration of Didactic Material on Rural Administration (August 1972 through May 1973, Montevideo) – Activity IV.S.164.

#### **Line VII. Administration of Agricultural Policy**

1. Organization of the Training Cycle Course on the Preparation and Evaluation of Agricultural Projects (PEPA/Uruguay) (1 July–19 October 1972, Montevideo) – Activity VII.S.121.
2. Training Cycle on the Elaboration and Elevation of Agricultural Projects (20 November 1972 through 31 January 1973, Montevideo) – Activity VII.ZSU.122.
3. Coordination of the In–service Training Stage of the PEPA Course Cycle (March through August 1973, Montevideo) – Activity VII.S.123.
4. Collaboration on the Selection of Priority Problems for Planning Action, Especially on the Formulation of Programs (October 1972 through January 1973, Montevideo) – Activity VII.S.141.
5. Annual planning Meeting of the Regional Office for the Southern Zone of IICA (11–15 June 1973, Montevideo) – Activity VII.S.255.

#### **VENEZUELA**

#### **Line I. Analysis and Information on Rural Development**

1. Advisory Services on the Integration of Libraries of the CIARA and IAN Foundation (4–8 June 1973, Caracas) – Activity I.D.128.
2. Up–dating Information on the Evolution of Agriculture and Agricultural Institutions in Venezuela (1 August through 14 September 1972, Caracas) – Activity I.A.151.
3. Communication Techniques Courses Activities (August 1971 through May 1972, San Felipe, Yaracuy) – Activity I.A.234.
4. Advisory Services on Agricultural Communication (31 July through 5 August 1972, Caracas) – Activity I.A.242.
5. Advisory Services on the Organization of Libraries (July 1972 through June 1973, Caracas) – Activity I.A.243.
6. Participation in the III Works on Library and Archives Sciences (26–29 August 1973, Barquisimeto) – Activity I.D.1211.

#### **Line II. Agricultural Education**

1. National Seminar on Extension (2–8 July 1972, Caracas) – Activity II.A.3.
2. Intensive Course on Soil Microbiology (November through December 1972, Merida) – Activity II.T.12.
3. Collaboration with University Authorities on the Study of Possibilities for Establishing a Graduate Teaching Institution in Agricultural Sciences (1 July 1972 through 30 June 1973) – Activity II.A.121.
4. III Meeting of the Venezuelan Association of Higher Agricultural Education (6–9 June 1973, Maracaibo) – Activity II.A.251.
5. National Meeting of Agricultural Extension Professors (4–8 December 1972, El Laurel) – Activity II.A.252.
6. Advisory Services to AVIEAS in Self–studies (1 July 1972 through 30 June 1973) – Activity II.A.253.

7. **Advisory Services to the Faculties of Animal Husbandry**  
(1 July 1972 through 30 June 1973) – Activity II.A.254.
8. **Course on Teaching Methodology**  
(12–23 February 1973, Caracas) – Activity II.A.263.
9. **First National Seminar of Agricultural Extension Professors at a University Level**  
(4–8 December 1972, Caracas) – Activity II.A.268.
10. **Advisory Services and Training to Extensionists of MAC**  
(1 July 1972 through 30 June 1973) – Activity II.A.332.
11. **Advisory Services to MAC on Conducting “Field Days”**  
(October 4, 1971 through May 1972, Maracay, Aragua) – Activity II.A.333.
12. **Regional Seminar in Agricultural Extension**  
(21–26 May 1973, Maracay) – Activity II.A.341.

### **Line III. Agricultural Research**

1. **Third National Course in Technical Writing**  
(8–12 May 1972, Maracay, Aragua) – Activity III.A.141.
2. **Regional Seminar on the Socio-economic Aspects of Agricultural Research**  
(10–13 April 1973, Maracay) – Activity III.A.511.

### **Line IV. Promotion of Agricultural Production**

1. **Formulation and Execution of a Training Plan for the Venezuelan Marketing Corporation**  
(1 July 1972 through 30 June 1973, Caracas) – Activity IV.A.142.

### **Line V. Multinational Integration**

1. **Advisory Services on Crops Zoning, Planning and Marketing**  
(December 1972 through June 1973, Maracay) – Activity V.A.115.

### **Line VI. Promotion and Carrying out of Structural Changes**

1. **Course on Technical Reports and Farm Appraisals**  
(23 April through 11 May 1973, Caracas) – Activity VI.A.132.
2. **Course on Farm Appraisals**  
(18 December 1972 through 12 January 1973, Caracas) – Activity VI.A.132.
3. **Advisory Services provided IAN on Agriculture Taxation**  
(1 July 1972 through 30 June 1973, Caracas) – Activity VI.A.133.
4. **Advisory Services provided the IAN Cadastral Unit**  
(1 July 1972 through 30 June 1973) – Activity VI.A.134.
5. **Workshop on Research Methods for Campesino Training**  
(7–31 May 1973, Mene Grande) – Activity VI.A.221.

### **Line VII. Administration of Agricultural Policy**

1. **Technical Programming Meeting on Ecological Research for Tropical America**  
(9–14 April 1973, Maracaibo) – Activity VII.S.231.

## **MULTINATIONAL ACTIVITIES**

### **Line I.**

1. **Advisory Services on the Establishment of a Library in the Coffee and Cacao Department of the Agriculture Secretariat of the Dominican Republic**  
(1 February 1973 through June 30 1973, Santo Domingo and Turrialba) – Activity I.D.115.
2. **Documentation Services and National Agriculture Bibliographies**  
(1 July 1972 through 30 June 1973, Central America) – Activity I.N.214.
3. **Directory of Agricultural Professionals of Central America**  
(1 July 1972 through 30 June 1973, Central America) – Activity I.N.216.

4. Advisory Services and Participation in Regional Meetings (5–17 March 1973, Costa Rica and Panama) – Activity I.N.222.
5. Collaboration on the Development of a Course in Agricultural Libraries in the Andean Zone (1 July 1972 through 30 June 1973, Turrialba and Lima) – Activity I.D.223.
6. Directory of Agricultural Professionals of Honduras (August through December 1973, Guatemala and Honduras).

## Line II

1. Guidance and Evaluation of Theses (1 July 1972 through 30 June 1973, Colombia, Bolivia, Costa Rica, Ecuador and Peru) – Activity II.C.111.
2. Advisory Services provided the Extension Services of El Salvador, Guatemala and Costa Rica (1 July 1972 through 30 June 1973, El Salvador, Guatemala and Costa Rica) – Activity II.N.142.
3. Advisory Services provided the Extension Services in the rest of the Countries of the Northern Zone (August 1972 through June 1973, Mexico and Honduras) – Activity II.N.142.
4. Advisory Services provided the Faculty of Forestry of Tarija (Bolivia) (December 1972 through March and April 1973, Bolivia and Peru) – Activity II.A.214.
5. Advisory Services provided the Forest Education Institutions in Colombia (December 1972 through May 1973, Peru and Colombia) – Activity II.A.223.
6. Advisory Services provided the Forest Education Institutions in Ecuador (July 1972 through June 1973, Peru and Ecuador) – Activity II.A.232.
7. Up–dating Studies on Agricultural Education of the Andean Zone (July 1972 through June 1973, Bolivia, Ecuador, Colombia, Peru, Venezuela) – Activity II.A.272.
8. Preparation of the Report on “Current Situation of Teaching in Forestry in the Andean Zone” (November 1972 through May 1973, Bolivia, Colombia, Ecuador, Peru and Venezuela) – Activity II.A.273.

## Line III

1. Production and Editing of Didactic Material on Animal Production and Pastures (1 July 1972 through 30 June 1973, Central America and Mexico) – Activity III.N.114.
2. Advisory Services provided on the Programming, Supervision and Evaluation of Research at the National Level, Coordinated with the Regional Program (1 July 1972 through 30 June 1973, Honduras, Nicaragua and El Salvador) – Activity III.N.212.
3. Advisory Services in Forest Research provided Ecuador and Bolivia (August 1972 through May 1973, Peru, Ecuador and Bolivia) – Activity III.A.212.
4. Establishment of a Regional Working Group on the Testing of Forest Species (September 1972 through May 1973, Peru, Bolivia, Colombia, Ecuador and Venezuela) – Activity III.A.213.
5. Advisory Services on the Planning and Execution of Physical–Biological Research (1 July 1972 through 30 June 1973, Central America and Panama) Activity III.N.311.
6. Training in Pulses Production Techniques (1 July 1972 through 30 June 1973, Guatemala and Colombia) – Activity III.N.313.
7. Coordination of the XIX Annual Meeting of the PCCMCA (September 1972 through March 1973, Central America) – Activity III.N.314.
8. Exchange of Materials with the Pulses Program of Countries outside the Central American Area (September–October 1972 through May–June 1973, Mexico, Puerto Rico, Haiti, Dominican Republic and Colombia) – Activity III.N.316.
9. Coordination and Advisory Services on the Eco–systematization of the Higher Andes (1 July 1972 through 30 June 1973, Ecuador, Peru, Chile, Argentina, and Bolivia) – Activity III.A.413.
10. Support to Research Work on Pastures and Native Forages (1 July 1972 through 30 June 1973, Regional Area of the Higher Andes) – Activity III.A.422.
11. Studies on the Nutritive Value of a White Mutant Bean (1 July 1972 through 30 June 1973, Turrialba, Costa Rica and Guatemala) – Activity III.T.1112.



#### Line IV

1. Technical Advisory Services on Research provided National Institutions (CIAT, INIAP) (25 September–4 October 1972, Colombia, Ecuador and Peru) – Activity IV.T.113.
2. Communication and Exchange between National Promotion, Education and Animal Production Programs (1 July 1972 through 30 June 1973, Central America) – Activity IV.N.132.
3. Study of the Animal Industry in Region B.2. (1 July 1972 through 30 June 1973, Colonia, Uruguay, Pelotas, Brazil) – Activity IV.S.512.
4. Publication of the Animal Husbandry Regionalization Study (July–December 1972, Buenos Aires and Montevideo) – Activity IV.S.513.
5. Advisory Services in Research on Pulses (1 July 1972 through 30 June 1973, Costa Rica, Nicaragua and El Salvador) – Activity IV.T.1131.

#### Line V.

1. Coordination with Integration Organisms (July 1972 through June 1973, Guatemala and Central America) – Activity V.N.112.
2. Studies of Production Costs for Zone–Classified Crops in Guatemala, Nicaragua and El Salvador (July 1972 through June 1973, Guatemala, Nicaragua and El Salvador) – Activity V.N.121.
3. The Editing and Publication of Costs Studies on Crops Production (July 1972 through June 1973, Guatemala and Central America) – Activity V.N.122.

#### Line VI

1. In–service Training on Farm Organization and Technical Assistance (July 1972 through June 1973, Mexico and Nicaragua) – Activity VI.N.112.
2. Direction of the Training Program and Agrarian Reform and Rural Development Studies of the Central American Isthmus (1 July 1972 through 30 June 1973, Central American Isthmus) – Activity VI.N.151.
3. Regional and National Studies on Farm Community Enterprises and Others with Agrarian Reform National Organisms (July 1972 through June 1973, Central America) – Activity VI.N.158.

Technical Direction and Administration of PRACA (1972, Central America) – Activity VI.N.161.

5. Advisory Services on the Execution of Activities of PRACA (Courses and Seminars) (1972, Central America) – Activity VI.N.163.
6. Institutional Diagnosis of the Farm Organization in Venezuela (24 July through 30 September 1972, Venezuela and Colombia) – Activity VI.C.223.
7. Support in Carrying Out Research in Honduras, Costa Rica and Panama on Associated Production Forms (in Cooperation with FAO) (19–21 March and 24–26 May 1973, Costa Rica and Panama) – Activity

#### Line VII

1. In–service Training in Documentation and Information in Tropical Agriculture (1 September through 13 October 1972, Costa Rica, Mexico, and Colombia) – Activity VII.S.212.
2. Meetings with National Coordinating Committees of the Cooperative Program for the Development of Tropical America (July 1972 through June 1973, Brazil, Colombia, Ecuador, Peru and Venezuela) – Activity VII.S.251.

#### ACTIVITIES CARRIED OUT BY IICA IN OTHER COUNTRIES

1. Participation in the Diffusion of AGRINTER in Countries of the Hemisphere and at a World–wide Level (1972 through 1973, Rome, Italy) – Activity I.D.136.
2. Participation in the Third Meeting of the Advisory Group for the Implementation of AGRIS (5–11 April 1973, London, England) – Activity I.D.141.
3. Participation in the Panel to Study the Creation of AGRIS (6–9 November 1972, Rome, Italy) – Activity I.D.141.

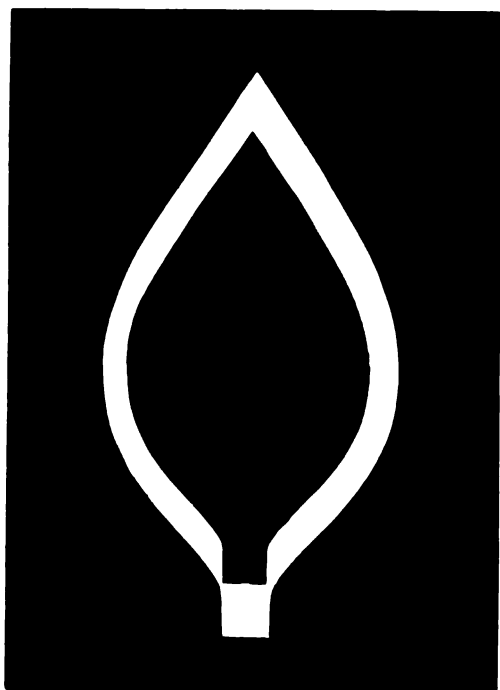
4. **Participation in the FAO/AGRIS/IAG Meeting and the International Documentation Meeting (10–25 September 1972, Hungary, Czechoslovakia and Holland) – Activity I.D.144.**

**Provide Study Trips and Participation of CEPLAC Technicians at International Technical Meetings Related with Cacao and other Regional Products (1 July 1972 through 30 June 1973, Malasia, Nigeria and Ghana) – Activity III.S.2811.**

6. **Participation in the 11th General Assembly and 12th Technical Meeting of the International Union of Conservation of Nature (IUCN) (10–16 September 1972, Canada).**

7. **Participation in the “Panel on Mutation Breeding of Vegetatively Propagated and Perennial Crops” (11–15 September 1972, Vienna, Austria) – Activity IV.T.113.**





## Appendix II

# INSTITUTIONS WITH WHICH IICA COOPERATED IN THE 1972–73 PERIOD

### ARGENTINA

Ministerio de Agricultura y Ganadería de la Nación  
(MAG)

Escuela para Graduados en Ciencias Agropecuarias de la  
República Argentina

Consejo Agrario Nacional

Consejo Federal de Inversiones (CFI)

Gobierno de la Provincia de la Rioja

Subsecretaría de Recursos Hídricos de la Nación

Corporación de Fomento del Río Colorado  
(CORFORID COLORADO)

Empresa Agua y Energía Eléctrica

Instituto Nacional de Tecnología Agropecuaria (INTA)

Estación Experimental Agropecuaria de Balcarce (INTA)

Estación Experimental de Marcos Suárez (INTA)

Estación Experimental Agropecuaria de la Banda (INTA)

Estación Experimental de Provincia Roque Sáenz Peña  
(INTA)

Estación Experimental de Concepción del Uruguay (INTA)

Centro Nacional de Investigaciones Agropecuarias—Castelar (INTA)

Ministerio de Asuntos Agrarios, Provincia de Córdoba

Ministerio de Economía, Provincia de Buenos Aires

Ministerio de Asuntos Agrarios Provincia de Buenos Aires

Instituto de Colonización, Chaco

Consejo Agrario de Santa Cruz

Asociación Universitaria de Educación Agrícola Superior

Instituto Provincial Estadística y Censos, Provincia de Santa Fé

Banco de la Nación Argentina

Gobierno de la Provincia de Santiago del Estero

Facultad de Agronomía de la Universidad de Buenos Aires

Facultad de Veterinaria de la Universidad de Buenos Aires

Corporación del Río Dulce

Servicio Nacional de Parques Nacionales

Instituto Nacional de Ciencia y Técnica Hídrica (INCYTH)

Gobierno de la Provincia de Santa Fé

Gobierno de la Provincia de la Pampa

Gobierno de la Provincia de San Juan

Gobierno de la Provincia de Tucumán

Gobierno de la Provincia de Jujuy

Gobierno de la Provincia de Catamarca

Gobierno de la Provincia de Formosa

Gobierno de la Provincia de Santa Cruz

Gobierno de la Provincia de San Luis

Facultad de Ciencias Agrarias, Universidad Nacional de Cuyo

Facultad de Ciencias Agrarias, Pontificia Universidad Católica Argentina

Facultad de Agronomía y Zootecnia, Universidad Nacional de Tucumán

Facultad de Agronomía de la Universidad Nacional de La Plata

Facultad de Ciencias Veterinarias de la Universidad Nacional de La Plata

Instituto Nacional de la Actividad Hípica

La Fundación Bolsa de Comercio

Cámara de Martilleros y Consignatarios

Bolsa de Cereales

Comisión de Documentación (IRAM)

Biblioteca Central de la Facultad de Agronomía y Facultad de Veterinaria de la Universidad de Buenos Aires

Facultad de Agronomía y Veterinaria de la Universidad del Nordeste

Consejo Nacional de Investigación Científica y Técnica

Universidad Nacional del Sur

Universidad Provincial de Jujuy

Universidad Nacional de Río IV

Universidad Nacional del Comahue

## **BOLIVIA**

Ministerio de Agricultura y Ganadería

Ministerio de Asuntos Campesinos

Consejo Nacional de Economía y Planificación

Ministerio de Industria y Comercio

Ministerio de Relaciones Exteriores

Corporación Boliviana de Fomento

Banco del Estado

Banco Central

Banco Agrícola de Bolivia

Instituto Indigenista Boliviano

Instituto Nacional de Trigo

Corporación Gestora del Proyecto Abapó—Izozog, Corgapai

Corporación de Desarrollo de Oruro

Corporación de Desarrollo de Chuquisaca



Corporación de Desarrollo de Cochabamba  
Corporación de Desarrollo de Santa Cruz  
Corporación de Desarrollo de las Fuerzas Armadas  
Consejo Nacional de Educación Superior  
Universidad Mayor de San Andrés, La Paz  
Universidad Mayor de San Simón, Cochabamba  
Estación Experimental "La Tamborada"  
Universidad de Santa Cruz  
Universidad de Oruro  
Universidad de Potosí  
Universidad de Tarija  
Universidad de Beni

#### BRAZIL

Universidade Federal de Viçosa  
Faculdade de Ciências Agrárias do Pará  
Instituto de Pesquisas e Experimentação Agropecuárias do Norte – IPEAN  
Associação de Crédito e Assistência Rural do Estado do Pará – ACAR-PARA  
Superintendência do Desenvolvimento da Amazônia – SUDAM  
Empresa Brasileira de Pesquisa Agropecuária – EMBRAPA  
Associação Brasileira de Crédito e Assistência Rural – ABCAR  
Universidade de Brasília  
Fundação Projeto Piauí  
Associação Brasileira de Educação Agrícola Superior – ABEAS  
Escola Superior de Agricultura "Luiz de Queiroz" – ESALQ  
Universidade Federal Rural do Rio de Janeiro – UFRRJ  
Universidade Federal do Ceará  
Universidade Federal do Rio Grande do Sul  
Universidade Federal de Santa Maria (Rio Grande do Sul) – UFSM

Universidade Federal de Minas Gerais  
Universidade Federal da Paraíba  
Ministério da Educação e Cultura – MEC  
Universidade Federal de Pelotas – UFPEL  
Faculdade de Medicina Veterinária de Universidade Federal de Minas Gerais  
Faculdade de Educação da Universidade Federal de Minas Gerais  
Departamento Nacional de Pesquisa Agropecuária – DNPEA  
Fundação Getúlio Vargas  
Instituto de Pesquisas Econômicas da Universidade de São Paulo  
Instituto de Pesquisas e Experimentação Agropecuária do Sul – IPEAS  
Conselho Nacional de Pesquisa – CNPq  
Comissão Executiva do Plano de Recuperação Econômico-Rural de Lavoura Cacaueira – CEPLAC  
Ministério de Minas e Energia  
Superintendência do Desenvolvimento de Nordeste – SUDENE  
Banco Central da República do Brasil  
Instituto Nacional de Colonização e Reforma Agrária – INCRA  
Companhia Brasileira de Alimentos – COBAL  
Companhia Brasileira de Armazenamento – CIBRAZEM  
Instituto Brasileiro do Desenvolvimento Florestal – IBDF  
Secretaria de Agricultura do Estado do Pará  
Grupo Executivo de Irrigação para o Desenvolvimento Agrícola – GEIDA  
Superintendência do Vale do São Francisco – SUVALE  
Departamento Nacional de Obras contra as Secas – DNOCS  
Departamento Nacional de Obras e Saneamento – DNOS  
Associação Nordestina de Crédito e Assistência Rural de Pernambuco – ANCARPE  
Secretaria de Agricultura do Estado da Bahia  
Secretaria de Agricultura do Estado de Pernambuco

Secretaria de Agricultura do Estado de Alagoas

Banco do Estado de Goiás

Associação de Crédito e Assistência Rural do Estado do Amazonas – ACAR-AM

Associação de Crédito e Assistência Rural do Estado do Maranhão

Associação Nordestina de Crédito e Assistência Rural do Piauí – ANCAR-PIAUI

Associação Nordestina de Crédito e Assistência Rural de Sergipe – ANCARSE

Associação Nordestina de Crédito e Assistência Rural da Bahia – ANCARBA

Associação de Crédito e Assistência Rural – ACARMINAS

Associação de Crédito e Assistência Rural do Espírito Santo – ACARES

Associação de Crédito e Assistência Rural do Estado do Rio de Janeiro

Associação de Crédito e Assistência Rural do Estado do Paraná – ACARPA

Associação de Crédito e Assistência Rural do Estado de Santa Catarina

Associação Sulina de Crédito e Assistência Rural – ASCAR

Associação de Crédito e Assistência Rural do Território de Rondonia

Associação Nordestina de Crédito e Assistência Rural do Ceará

Associação Nordestina de Crédito e Assistência Rural do Rio Grande do Norte

Associação Nordestina de Crédito e Assistência Rural da Paraíba

Associação Nordestina de Crédito e Assistência Rural do Estado de Alagoas

Associação de Crédito e Assistência Rural do Estado de Goiás

Associação de Crédito e Assistência Rural do Distrito Federal

Banco Regional de Desenvolvimento do Extremo Sul

#### CHILE

Ministerio de Relaciones Exteriores

Ministerio de Agricultura

Oficina de Planificación Nacional (ODEPLAN)

Oficina de Planificación Agrícola (ODEPA)

Instituto de Investigaciones Agropecuarias (INIA)

Servicio Agrícola y Ganadero (SAG)

Dirección IV Zona del SAG

Corporación de la Reforma Agraria (CORA)

Instituto de Recursos Naturales (IREN)

Instituto de Desarrollo Agropecuario (INDAP)

Instituto de Capacitación e Investigación en Reforma Agraria (ICIRA)

División de Conservación de Recursos Naturales (DECOREN)

Empresa Nacional de Semillas (ENS)

Ministerio de Obras Públicas y Transportes (MOPT)

Dirección General de Aguas

Dirección de Riego

Corporación de Fomento de la Producción (CORFO)

Banco del Estado de Chile

Comisión Nacional de Investigación Científica y Tecnológica (CONICYT)

Ministerio de Educación

Consejo de Rectores de las Universidades Chilenas

#### COLOMBIA

Acción Cultural Popular

Federación Nacional de Cafeteros de Colombia (FEDERCAFE)

Instituto de Mercadeo Agropecuario (IDEMA)

Instituto de Desarrollo de los Recursos Naturales Renovables (INDERENA)

Instituto Colombiano de la Reforma Agraria (INCRA)

Asociación Bancaria, Agrocrédito

Almacenes Generales de Depósito Mercantil S. A. (ALMACENAR)

Almacenes Generales de Depósito Santa Fé S. A. (ALMAVIVA)

Banco Ganadero

Banco de la República  
Caja de Crédito Agrario, Industrial y Minero  
Supermercados Carulla  
Centro de Estudios e Investigaciones sobre Mercadeo Agropecuario (CEIMA)  
Cooperativa Pesquera de Tolú (COPETOLU)  
Corporación de Desarrollo del Valle del Cauca  
Departamento Administrativo Nacional de Estadística  
Federación Nacional de Arroceros  
Federación Colombiana de Ganaderos  
Federación Nacional de Cultivadores de Cereales  
Fondo Financiero Agrario  
Instituto Colombiano Agropecuario (ICA)  
Almacenes Generales de Depósito de Creditario e Idema, Inagrario  
Ministerio de Agricultura  
Secretaría de Agricultura y Desarrollo de Antioquía  
Secretaría de Agricultura y Desarrollo de Risaralda  
Secretaría de Agricultura y Desarrollo del Tolima

#### **COSTA RICA**

Ministerio de Agricultura de Costa Rica  
Universidad de Costa Rica  
Ministerio de Agricultura y Ganadería (MAG)  
Banco Nacional de Costa Rica  
Centro Agrícola Regional (CAR, Cartago)  
Instituto de Tierras y Colonización (ITCO)  
Servicio Nacional de Electricidad de Costa Rica  
Federación de Cámaras de Ganaderos de Costa Rica

#### **DOMINICAN REPUBLIC**

Secretaría de Estado de Agricultura  
Universidad Autónoma de Santo Domingo  
FIDAGRO

SEA  
Centro Nacional de Investigaciones Agropecuarias (CNIA)  
Instituto Agrario Dominicano (IAD)  
Oficina de Coordinación de Leyes Agrarias de la Presidencia de la República

#### **ECUADOR**

Ministerio de Agricultura  
Facultad de Agronomía y Medicina Veterinaria de la Universidad Técnica de Machala  
Facultad de Agronomía y Medicina Veterinaria de la Universidad Nacional de Loja  
Universidad Técnica de Esmeraldas "Luis Vargas Torres"  
Facultad de Ingeniería Agronómica y Medicina Veterinaria, Universidad Central  
Facultad de Ciencias Naturales, Universidad de Guayaquil  
Banco Nacional de Fomento  
Junta Nacional de Planificación  
Instituto Ecuatoriano de Reforma Agraria (IERAC)  
Instituto Ecuatoriano de Recursos Hidráulicos (INERHI)  
Instituto Tecnológico de Chimborazo  
Oficina de Avalúos y Catastro de Ecuador  
Centro de Reconversión Económica del Azuay  
Centro de Rehabilitación de Machala  
Comisión de Estudio para Desarrollo Río Guayas (CEDEGE)

#### **EL SALVADOR**

Consejo Nacional de Planificación y Coordinación Económica (CONAPLAN)  
Programa Interamericano de Formulación y Ejecución de Proyectos de Desenvolvimiento (CETREDE)  
Ministerio de Agricultura y Ganadería  
Centro Nacional de Tecnología Agropecuaria (CENTA)  
Instituto de Colonización Rural (ICR)

## GUATEMALA

Instituto Nacional de Comercialización Agrícola  
Dirección de Enseñanza y Capacitación  
División de Extensión Agrícola  
Facultad de Agronomía de la Universidad de San Carlos  
Escuela de Zootecnia, Facultad de Veterinaria, Universidad de San Carlos  
Instituto Técnico de Agricultura  
Banco de Guatemala  
Instituto Nacional de Transformación Agraria (INTA)  
Consejo Nacional de Planificación Económica  
Universidad del Valle de Guatemala  
Programa de Desarrollo Ganadero de la Costa Sur de Guatemala

## HAITI

Banco Latinoamericano de Semillas Forestales  
IHPCADE  
DARNDR  
Gobierno de Haití

## HONDURAS

Consejo Superior de Planificación Económica  
Secretaría de Estado en el Despacho de Recursos Naturales y sus Dependencias Centralizadas  
Banco Nacional de Fomento  
Instituto Hondureño del Café  
Instituto Nacional Agrario  
Banco Central de Honduras, Proyecto Ganadero  
Universidad Nacional Autónoma de Honduras  
Escuela Agrícola Panamericana  
Federación de Cooperativas Agropecuarias de Honduras (FECOAGROH)  
Federación Nacional de Agricultores y Ganaderos de Honduras (FENAGH)

## MEXICO

Escuela Superior de Agricultura "Antonio Narro"  
Facultad de Agrobiología – Universidad Michoacana de San Nicolás de Hidalgo  
Universidad Autónoma de Tamaulipas  
Subsecretaría Forestal y de la Fauna de México  
Asociación Mexicana de Educación Agrícola Superior (AMEAS)  
Dirección de Educación Tecnológica Agropecuaria de la SEP  
Estación Tecnológica Agropecuaria de la SEP  
Centro Nacional de Investigaciones para el Desarrollo de Zonas Áridas  
Colegio de Graduados, Escuela Superior de Agricultura "Antonio Narro"  
Colegio de Graduados y Servicio de Extensión de México  
Centro Nacional de Investigaciones para el Desarrollo de Zonas Áridas (CNIZA)  
Dirección General de Extensión Agrícola  
Universidad de Chihuahua  
Unión Ganadera Regional de Coahuila  
Servicio Cooperativo de Extensión Agrícola de Coahuila  
Banco de México  
Banco Ejidal  
CONAZA  
Asociación Latinoamericana de Producción Animal  
Asociación Mexicana de Producción Animal  
Programa Campesino de Productividad de México  
Departamento de Asuntos Agrarios y Colonización  
Banco Nacional Agropecuario  
Banco Agropecuario del Noroeste  
Sociedad Local de Crédito Ejidal  
Colegio de Posgraduados  
Servicio Estatal de Extensión Agrícola de Coahuila  
Servicio Nacional de Extensión Agrícola

## NICARAGUA

Escuela Internacional de Agricultura y Ganadería de Rivas

Asociación de Ganaderos de Rivas

Latinoconsult

Finca el Pino, Rivas

Confederación Universitaria Centroamericana (CSUCA)

Escuela Nacional de Agricultura y Ganadería (ENAG)

Instituto Agrario Nacional (IAN)

Ministerio de Agricultura y Ganadería

Banco Nacional de Nicaragua

Instituto de Fomento Nacional

Instituto Nacional de Comercio Interior y Exterior

Oficina Nacional de Planificación

## PANAMA

Instituto Nacional Agropecuario de Divisa (Panamá)

Ministerio de Desarrollo Agropecuario (MIDA)

Instituto Técnico de Agricultura (Guatemala)

Programa de Pastos y Forrajes (Panamá)

Instituto de Fomento Industrial

Comisión Bancaria Nacional

Dirección de Crédito del Ministerio Desarrollo Agropecuario

Ministerio de Agricultura y Ganadería (MAG)

CRA Comisión de Reforma Agraria

CONAC

Programme des Nations Unies Pour le Developpement (PNUD, Panamá)

Facultad de Agronomía, Universidad de Panamá

## PARAGUAY

Secretaría Técnica de Planificación (STP)

Ministerio de Agricultura y Ganadería (MAG)

Dirección de Investigación y Extensión Agropecuaria y Forestal

Servicio de Extensión Agrícola Ganadera

Dirección de Comercialización y Economía Agropecuaria

Dirección de Educación Agrícola

Coordinación del Proyecto Integrado de Desarrollo Agropecuario (PIDAP)

Banco Nacional de Fomento (BNF)

Crédito Agrícola de Habilitación (CAH)

Instituto de Bienestar Rural (IBR)

Facultad de Agronomía y Veterinaria de la Universidad Nacional de Asunción (FAV)

Escuela de Servicio Social de la Universidad Nacional de Asunción (ESS)

## PERU

Dirección General de Investigación Agraria

Dirección General Forestal, Caza y Tierras

Dirección de Castastro Rural

Dirección de Producción Agraria

Universidad Nacional Agraria (UNA) La Molina

Universidad Agraria de la Selva, Tingo María

Universidad Nacional Técnica de Piura

Universidad San Antonio Abad del Cuzco

Universidad Nacional Técnica de Cajamarca

Universidad Nacional de la Amazonía

Universidad Técnica del Altiplano, Puno

Escuela Superior de Administración Pública (ESAP)

Instituto Veterinario de Investigación Tropical y de Altura (IVITA)

Centro Nacional de Capacitación e Investigación de la Reforma Agraria (CENCIRA)

Misión de Carolina del Norte

## TRINIDAD AND TOBAGO

"Coffee Industry Board"



## UNITED STATES

Misión de la Universidad de Utah  
Universidad de Puerto Rico  
United States Atomic Energy Commission  
International Atomic Energy Agency  
Ford Foundation  
Kellogg Foundation  
Rockefeller Foundation  
Regional Pulse Improvement Project (Puerto Rico)

## URUGUAY

Ministerio de Ganadería y Agricultura  
Oficina de Programación y Política Agropecuaria (OPYPA)  
Centro de Investigaciones Agrícolas "Alberto Boerger" (La Estanzuela)  
Instituto Nacional de Colonización  
Universidad de la República  
Facultad de Agronomía  
Facultad de Veterinaria  
Universidad del Trabajo del Uruguay  
Departamento de Información y Documentación  
Ministerio de Obras Públicas  
Dirección de Hidrología  
Asociación Interamericana de Bibliotecarios y Documentalistas Agrícolas – División Uruguay  
Secretariado Uruguayo de la Lana (SUL)

## VENEZUELA

Ministerio de Agricultura y Cría  
Dirección de Extensión del MAC  
Dirección de Investigación del MAC  
Universidad Central de Venezuela  
Universidad del Zulia  
Universidad de los Andes

Instituto Agrario Nacional  
Programa Integral de Desarrollo Agrícola  
Fundación para el Desarrollo Integral de la Zona Occidental (DIROC)  
Fundación para la Capacitación e Investigación Aplicada a la Reforma Agraria (CIARA)  
Instituto Pedagógico  
Universidad del Oriente  
Universidad Centro Occidental

## HOLLAND

Embajada de Holanda en Costa Rica

## SWITZERLAND

Misión Suiza

## INTERNATIONAL ORGANISMS AND INTER-AMERICAN CENTERS

ONU (Organización de las Naciones Unidas)  
OEA (Organización de los Estados Americanos)  
BID (Banco Interamericano de Desarrollo)  
BIRF (Banco Internacional de Reconstrucción y Fomento)  
AID (Agency for International Development)  
CIAT (Centro Internacional de Agricultura Tropical)  
OIRSA (Organismo Internacional Regional de Sanidad Agropecuaria)  
ROCAP (Regional Office of the Alliance for Progress for Central America and Panama)  
PIJR (Programa Interamericano para la Juventud Rural)  
CSUCA (Consejo Superior Universitario Centroamericano)  
CIMPEC (Centro Interamericano para la Producción de Material Educativo y Científico para la Prensa)  
CIESPAL (Centro Internacional de Estudios Superiores de Periodismo para América Latina)  
SID (Sociedad Internacional para el Desarrollo)  
OIT (Organización Internacional del Trabajo)  
PCCMCA (Programa Cooperativo Centroamericano para el Mejoramiento de Cultivos Alimenticios)

**CEPAL (Comisión Económica para América Latina)**

**ICIRA (Instituto de Capacitación e Investigación en Reforma Agraria)**

**UNESCO (Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura)**

**CETREDE (Programa Interamericano de Formulación y Ejecución de Proyectos de Desarrollo)**

**INCAP (Instituto de Nutrición de Centroamérica y Panamá)**

**ACEAS (Asociación Centroamericana de Educación Agrícola Secundaria)**

**BCIE (Banco Centroamericano de Integración Económica)**

**FAO (Organización de las Naciones Unidas para la Agricultura y la Alimentación)**

**PNUD (Programa de Naciones Unidas para el Desarrollo)**





## Appendix III

# PARTICIPANTS IN IICA'S ACTIVITIES

TABLE 17

Country	1970	1971	1972	1973
Argentina	87	80	217	20
Bolivia	43	89	102	74
Brazil	299	206	432	254
Colombia	315	324	523	482
Costa Rica	35	27	261	226
Chile	139	118	471	68
Dominican Republic	102	73	34	178
Ecuador	351	290	82	17
El Salvador	62	54	32	—
Guatemala	68	102	295	258
Haiti	4	2	—	82
Honduras	13	40	—	77
Mexico	95	135	237	281
Nicaragua	69	34	36	70
Panama	43	45	126	59
Paraguay	54	71	74	53
Peru	218	33	119	175
United States	4	14	—	—
Uruguay	29	16	147	56
Venezuela	157	207	169	221
<b>TOTAL</b>	<b>2,187</b>	<b>1,960</b>	<b>3,357</b>	<b>2,651</b>

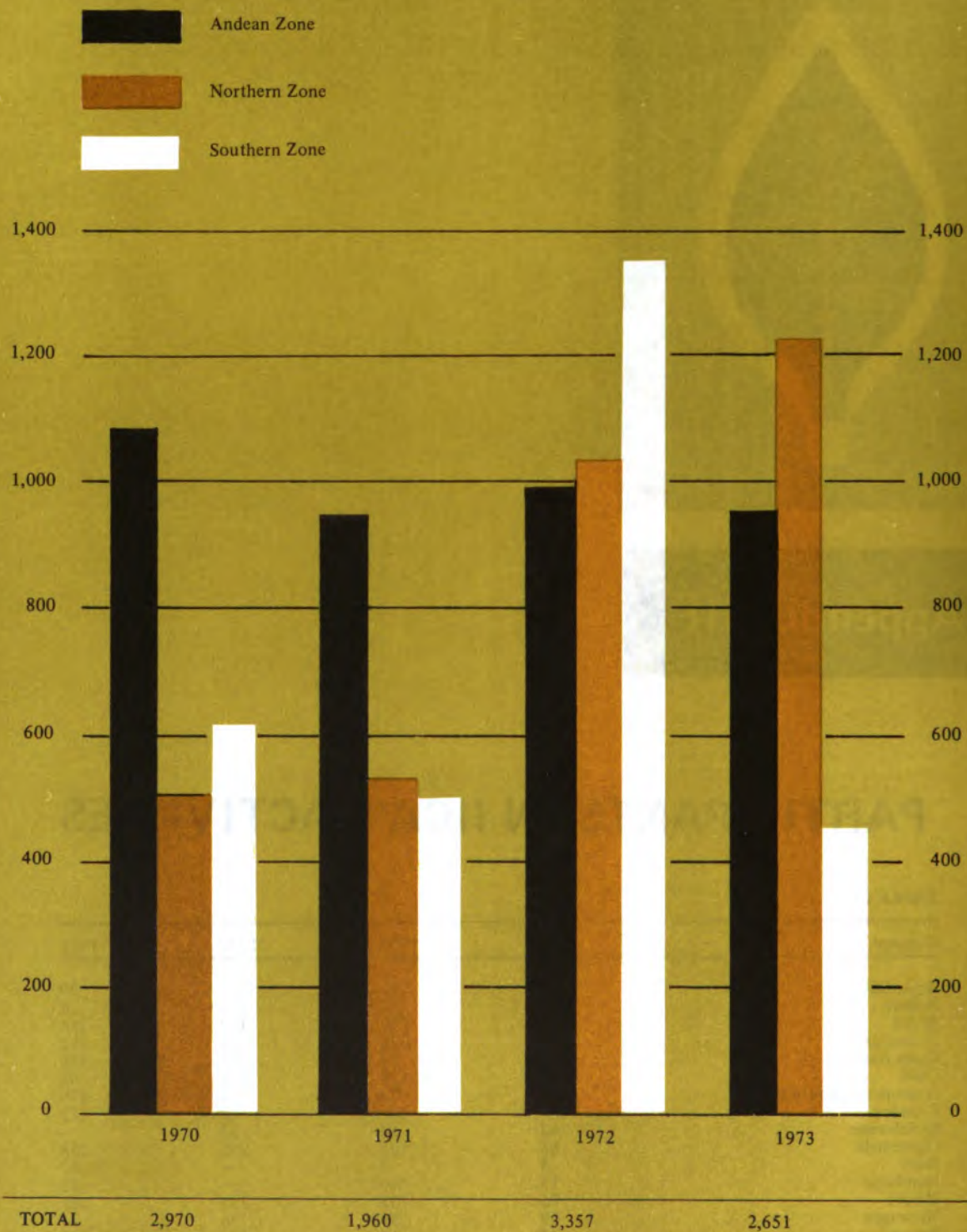
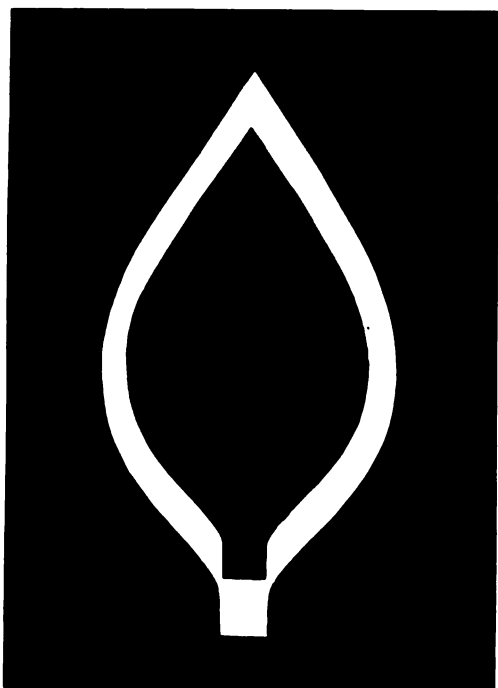


FIGURE 6. PARTICIPANTS IN IICA ACTIVITIES, BY ZONE



## Appendix IV

# PUBLICATIONS

Following is the list of publications by IICA technicians or their students, and of publications results from the cooperative action of IICA with certain national institutions. The publications are presented in alphabetical order: publications by technicians; graduate students theses; proceedings and reports from conferences, meetings and seminars; and periodic publications. The latter include the journals which IICA publishes regularly.



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2. ———, y OVIEDO, R. Análisis económico del cultivo de frijol en los Departamentos de San Vicente, Cabañas, Cuscatlán y San Salvador, El Salvador. IICA. Publicación Miscelánea no. 97. 1972. 38 p.
3. ———. Estudios diagnósticos a nivel de proyecto. In Curso Internacional sobre Organización Campesina y Asistencia Técnica en el Desarrollo Rural, México, 1972. 16 p.
4. ———, y OVIEDO, R. Modelos econométricos para predicción: el caso de frijol en El Salvador. In Reunión Anual del Programa Cooperativo Centroamericano para el Mejoramiento de Cultivos Alimenticios, Managua, Nicaragua, 1972. 23 p.
5. ———. Principios de la programación integral y estudios macroeconómicos. In Curso Internacional de Organización Campesina y Asistencia Técnica en el Desarrollo Rural, México, 1972. 19 p.
6. ———. Teoría de la planificación del desarrollo. In Seminario Internacional sobre Planificación Regional de la Reforma Agraria. Programa de Adiestramiento y Estudios sobre Reforma Agraria y Desarrollo Rural del Istmo Centroamericano, San José, Costa Rica, 1972. 15 p.
7. ———. Principes fondamentaux pour l'étude des coûts de production de grains essentiels. Port-au-Prince, Cours National en Préparation et Evaluation de Projets de Développement Agricole, 1973. 19 p.
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9. ALPIZAR, J. y VOHNOUT, K. Crecimiento de bovinos suplementados con banano. I. Efectos de la presión de pastoreo. In Reunión Latinoamericana de Producción Animal, 4a, Guadalajara, México, 1973. p. R-35.
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11. ———, PAEZ, G. y LEIVA, M. Influencia del intervalo de corte y la fertilidad en el rendimiento de *Panicum maximum* Jacq. In Reunión Latinoamericana de Producción Animal, 4a, Guadalajara, México, 1973. p. P-36.
12. ALVEAR, A. Reseña a: Bibliografías Agrícolas de América Central: Costa Rica, de M. Huertas. Boletín para Bibliotecas Agrícolas (Costa Rica) 9(2):135. 1972.
13. ———. Reseña a: Bibliografías Agrícolas de América Central: Panamá, de C. D. de Herrera. Boletín para Bibliotecas Agrícolas (Costa Rica) 9(2):135-136. 1972.
14. ———. Reseña a: Contribuciones del IICA a la literatura de las ciencias agrícolas, de M. Huertas y M. D. Malugani. Boletín para Bibliotecas Agrícolas (Costa Rica) 9(2):137. 1972.
15. ———. Reseña a: Bibliografías de América Central: Nicaragua, de M. Blanco de Gómez. Boletín para Bibliotecas Agrícolas (Costa Rica) 9(3):232. 1972.
16. ALVEAR, A. Reseña a: Bibliografía sobre colonización en América Latina. Boletín para Bibliotecas Agrícolas (Costa Rica) 9(4):317. 1972.
17. ARBOLEDA-SEPULVEDA, O y MALUGANI, M. D. Educación continuada de especialistas en el uso de la literatura agrícola; una experiencia del IICA. Boletín para Bibliotecas Agrícolas (Costa Rica) 9(2):65-92. 1972.
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También en: Boletín para Bibliotecas Agrícolas (Costa Rica) 9(4):271-288. 1972.
20. ———. 3000 libros agrícolas en español. IICA. Documentación e Información no. 22. 1972. 178 p.
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Trabajo presentado a la II Reunión de Bibliotecarios y Documentalistas Agrícolas del Ecuador, Guayaquil, 1973.
24. ———. Guía para la elaboración de un proyecto para la creación del Centro Ecuatoriano de Documentación Agrícola (CEDA). Turrialba, Costa Rica, IICA-CIDIA, 1973. 30 p.
25. ARIAS, A. M. Reseña a: Bibliografía sobre juventudes rurales en América Latina. Boletín para Bibliotecas Agrícolas (Costa Rica) 9(3):232. 1972.
26. ———. Reseña a: Notas bibliotecológicas, de G. Kramer, comp. Boletín para Bibliotecas Agrícolas (Costa Rica) 9(4):319. 1972.
27. ———. Reglas de la A.L. A. para la ordenación de las tarjetas en el catálogo; cambio a la 1 ed. preparada por G. P. de Montoya para los fines del Curso de Adiestramiento en Bibliotecas Agrícolas. Turrialba, Costa Rica, IICA-CIDIA, 1973. 12 p.
28. ASCENCIO, J. y FARGAS, J. E. Análisis del crecimiento del frijol (*Phaseolus vulgaris* var. 'Turrialba-4') cultivado en solución nutritiva. Turrialba (Costa Rica) 23(4):420-428. 1973.
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30. BACHMANN, K., BADILLA, R., SCHELLSTEDE, W. y PINCHINAT, A. M. Pruebas de rendimiento y consumo humano directo de la soya en Costa Rica. In Reunión Anual del Programa Cooperativo Centroamericano para el Mejoramiento de Cultivos Alimenticios, 19a, San José, Costa Rica, 1973. (En prensa).
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37. ———. La planificación de las estaciones experimentales en relación a las zonas de vida humana y vegetal de la región andina. In Seminario Regional sobre Gestión de Centros de Investigación Agrícola, Lima, Perú, 1973. Lima, IICA, Zona Andina, ESAP, 1973. pp. C-3-2-1-10.
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45. CACERES RAMOS, H. IV Mesa Redonda del Programa Interamericano de Desarrollo de Bibliotecas y Documentación Agrícolas. Documento de base (Sistema Interamericano de Información para las Ciencias Agrícolas AGRINTER). Turrialba, Costa Rica, IICA-CIDIA, 1972. 21 p.
46. CACERES RAMOS, H. Obras básicas para una biblioteca sobre café. Turrialba, Costa Rica, IICA-CIDIA, 1973. 23 p. (Mimeografiado).
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49. CAMACHO SAA, C. y OVIEDO ZELAYA, R. Estudio económico sobre el cultivo del frijol en la zona de Ahuachapán, El Salvador, Guatemala, IICA, Zona Norte, 1972. 16 p. (Publicación ZN/103-72).
50. CAMAÑO, C. Théorie du marché. Port-au-Prince, Cours National en Préparation et Evaluation de Projets de Développement Agricole, 1973. 48 p.
51. CARDONA, C., DEATON, O. y MUÑOZ, H. Edad de destete y comportamiento reproductivo de ganado de carne. In Reunión Latinoamericana de Producción Animal, 4a, Guadalajara, México, 1973. p. G-48.
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Trabajo presentado a la Mesa Redonda sobre Asistencia Técnica Internacional auspiciada por el IICA, octubre 5, 1972.
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55. ———. Bibliografía de bibliografías agrícolas del Ecuador, 1965-1972. Quito, IICA, Zona Andina, 1973. 7 p.
56. ———. Bibliotecarios y documentalistas agrícolas en el equipo multidisciplinario del desarrollo agrícola. In Reunión de Bibliotecarios y Documentalistas Agrícolas del Ecuador, 2a, Guayaquil, Ecuador, 1973. Quito, IICA, 1973, 9 p.
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58. ———. El sistema en la producción animal. (Conferencia dictada en el Curso Nacional sobre Utilización de los Ecosistemas en Ganadería, Cochabamba, Bolivia, 1973). s.n.t. 5 p.
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Trabajo presentado a la III Reunión de Investigadores y Especialistas Forrajeros del Perú, Pucallpa, Marzo 4-11, 1973.
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62. ————. La investigación y el apoyo a los programas de producción. In Reunión Nacional de la Asociación Boliviana de Producción Animal, 1a, Santa Cruz de la Sierra, Bolivia, 1973.
63. ————. Patacamaya: hombre y desarrollo. Quito, IICA, 1973. 51 p.
64. ————. Proyección de la industria de ovinos y camélidos en Bolivia. Conferencia dictada en el Curso Nacional sobre Utilización de los Ecosistemas en Bolivia, Cochabamba, 1973. 5 p.
65. ————. Suma e interacción de disciplinas en la investigación agrícola. In Seminario Regional sobre Aspectos Socio-Económicos de la Investigación Agrícola, Maracay, Venezuela, 1973, Maracay, IICA, 1973. 23 p. (Doc. C-5a).
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76. CUBILLOS, G. BRITO, F. y FERRANDO, A. Productividad de cinco tipos de praderas en el sur de Chile. In Reunión Latinoamericana de Producción Animal, 4a, Guadalajara, México, 1973, 1973. p P-44.
77. CHAVEZ, O. Sistematización de tierras. In Curso Nacional sobre Operación, Mantenimiento y Desarrollo de Areas de Riego, 1°, Parral, Chile, 1972. Santiago, Chile, IICA, 1972. 71 p.
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35. SEMINARIO NACIONAL PARA PROFESORES DE ZOOTECNIA, 1º, HUANCAYO, PERU, 1973. Lima, IICA, Zona Andina, Programa Académico de Ciencias Agropecuarias, Universidad Nacional del Centro del Perú, 1973. p. irr.
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42. SEMINARIO SOBRE COMUNICACION PARA EL DESARROLLO, BOGOTA, COLOMBIA, 1972. Conferencias y documentos. Bogotá, IICA-CIRA, Programa Nacional de Capacitación Agropecuaria, 1972. p. irr.
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M. Genis
- BOLETIN DE LA ZONA ANDINA  
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- TURRIALBA  
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Ed.: Alicia Bocca  
Héctor Moncrieff
- DESARROLLO DEL TROPICO AMERICANO  
Números 1, 2, 3 y 4: 1972-1973  
Ed.: Carmen Villegas  
Orlando Arboleda
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Enero-Diciembre, 1972  
Enero-Marzo, 1973  
Ed.: Alejandro MacLean  
Ramón Pérez Senac





## Appendix V



## INTERNATIONAL PROFESSIONAL PERSONNEL



Name	Nationality	Academic Degree	Position	Location
Acosta, Jaime	Colombia	Economist	Economist	San Jose, Costa Rica
Aguirre, Juan A.	Cuba	Ph.D.	Agricultural Programmer	Guatemala, Guatemala
Alán, Juan J.	Costa Rica	M.S.	Cytogeneticist	Turrialba, Costa Rica
Albertin, Waldemar	Germany	Ph.D.	Forester	Turrialba, Costa Rica
Alvarez, Hugo	Bolivia	M.A.	Forester	Lima, Peru
Alvear, Gualberto	Ecuador	B.A.	Librarian	Turrialba, Costa Rica
Alvim, Paulo de T. <sup>1</sup>	Brazil	Ph.D.	Plant Physiologist	Itabuna, Brazil
Amaral, Nelson <sup>2</sup>	Uruguay	M.S.	Agricultural Economist	Buenos Aires, Argentina
Ansorena, Ignacio	Uruguay	Ph.D.	Extensionist	Bogota, Colombia
Araujo, Jose Emilio	Brazil	Dr. Agr.	Director General	San Jose, Costa Rica
Arboleda, Orlando	Colombia	M.L.S.	Documentalist	Turrialba, Costa Rica
Arias, Carlos Luis	Costa Rica	M.A.	Communicator	Mexico, D.F., Mexico
Backer, Tomás <sup>3</sup>	Bolivia	M.S.	Agricultural Develop. Project Specialist	Porto Alegre, Brazil
Barrios, José	Chile	M.S.	Irrigation Specialist	Rio de Janeiro, Brazil
Barros, Mario Paes de	Brazil	M.S.	Rural Sociologist	Asuncion, Paraguay
Bazán, Rufo	Bolivia	Ph.D.	Soils Specialist	Turrialba, Costa Rica
Bello, Eduardo <sup>4</sup>	Uruguay	M.S.	Research Specialist	Montevideo, Uruguay
Beltrán, Luis R.	Bolivia	Ph.D.	Director IICA-CIRA	Bogota, Colombia
Blair, Enrique	Colombia	Ing. Agr.	Director P-206, Inter-Am. Pgm. Rur. Dev. & Ag. Ref.	San Jose, Costa Rica
Blasco, Mario <sup>5</sup>	Spain	Ph.D.	Agricultural Research Specialist	Lima, Peru
Bornemisza, Elemer <sup>6</sup>	Costa Rica	Ph.D.	Soil consultant and Instructor	San Jose, Costa Rica
Buitrón, Víctor Hugo	Ecuador	M.A.	Country Representative	Asuncion, Paraguay
Buresch, Osvaldo <sup>7</sup>	Argentina	Ing. Agr.	Marketing Specialist	Buenos, Aires, Argentina
Caballero, Hernán	Chile	Ph.D.	Director, Graduate School	Buenos, Aires, Argentina
Cabral, José Irineu <sup>8</sup>	Brazil	Economist	Country Representative	Rio de Janeiro, Brazil
Cáceres, Hugo	Colombia	M.L.S.	Documentalist	Turrialba, Costa Rica
Camacho, Edilberto	Costa Rica	M.A.	Horticulturist	Turrialba, Costa Rica
Cardozo, Armando	Bolivia	Ph.D.	Animal Husbandman	Quito, Ecuador
Carrera, Hernán	Ecuador	Economist	Economist, Agr. Plan.	Quito, Ecuador
Cásseres, Ernesto	Costa Rica	Ph.D.	Coordinator for the Graduate Program on Agric. Sciences	Santiago, Chile
Castronovo, Alfonso	Argentina	M.S.	Educator	Buenos Aires, Argentina
Clifford, Roy A.	United States	Ph.D.	Rural Sociologist	Guatemala, Guatemala
Cohan, Hugo	Argentina	Ph.D.	Agricultural Economist	Montevideo, Uruguay
Coto, Rogelio	Costa Rica	Comm. Spec.	Exec. Sec., C.A.N., C. R.	San Jose, Costa Rica
Cruz, Levy	Brazil	M.S.	Rural Sociologist	Itabuna, Brazil
Cubillo, Gustavo	Chile	Ph.D.	Agrostologist	Turrialba, Costa Rica
Cusicanqui, Jaime	Bolivia	Comm. Spec.	Communicator	Bogota, Colombia
Chaves, Osvaldo	Peru	Ing. Agr.	Irrigation Specialist	Santiago, Chile
Deaton, Oliver	United States	Ph.D.	Animal Husbandman	Turrialba, Costa Rica
De la Cruz, Matilde	Costa Rica	Editor	Editor (Textbooks)	Turrialba, Costa Rica
Díaz Bordenave, Juan	Paraguay	Ph.D.	Communicator	Rio de Janeiro, Brazil
Donoso, Augusto	Chile	Ing. Agr.	Regional Planning Specialist	Bogota, Colombia
Elgueta, Manuel	Chile	Ing. Agr.	Director, IICA-CTEI	Turrialba, Costa Rica
Elvir, Miguel A.	Honduras	B.S.A.	Extensionist	Guatemala, Guatemala
Erickson, Ana María de	Guatemala	Librarian	Executive Secretary AIBDA	Turrialba, Costa Rica
Erickson, Arnold L.	United States	M.S.	Secretary of Research	Turrialba, Costa Rica
Escoto, Claudio	Costa Rica	LL.B.	Administration Specialist	San Jose, Costa Rica
Fargas, José	Ecuador	Ph.D.	Plant Physiologist	Turrialba, Costa Rica
Fernández, Angel <sup>9</sup>	Argentina	Librarian	Documentalist	Buenos Aires, Argentina
Fernández, Hortensia	Colombia	B.A.	Information Editor	San Jose, Costa Rica

1 Address: Centro de Pesquisas do Cacau. Caixa Postal 7, Itabuna, Brazil

2 Until December 4, 1972

3 Effective November 10, 1972

4 Until October 28, 1972

5 Until January 31, 1973 - Soils Microbiologist in CTEI, Turrialba, Costa Rica

6 Until April 15, 1973 - Educator, Lima, Peru

7 Until December 31, 1972 - Office Assistant in Washington, D.C.

8 Effective April 26, 1973, in Brasilia, Brazil, as President of EMBRAPA

9 Associate Personnel

Name	Nationality	Academic Degree	Position	Location
Fernández, Hugo <sup>1</sup>	Uruguay	M.S.	Rural Youth Specialist	San Jose, Costa Rica
Fernández, Carlos E.	Guatemala	Ph.D.	Country Representative	Mexico, D.F., Mexico
Ferreiro, Carlos A.	Uruguay	Accountant	Head, Accounting Div.	San Jose, Costa Rica
Fletschner, Carlos <sup>2</sup>	Paraguay	M.S.	Marketing Specialist	Buenos Aires, Argentina
Flores, Luis <sup>3</sup>	Peru	Lic. Cien.Pol.	Rural Sociologist	Bogota, Colombia
Forsythe, Warren	Jamaica	Ph.D.	Soils Specialist	Turrialba, Costa Rica
Franco, Alberto	Colombia	M.S.	Planning Specialist	San Jose, Costa Rica
Frigerio, Norberto <sup>4</sup>	Argentina	Ph.D.	Marketing Specialist	San Jose, Costa Rica
Frias, Hernán	Chile	Ing. Agr.	Extensionist	Guatemala, Guatemala
Galrao, María José	Brazil	Librarian	Documentalist	Turrialba, Costa Rica
Garcés, Carlos <sup>5</sup>	Colombia	Ph.D.	Dean, ICA Grad. School	Bogota, Colombia
García, Ubaldo	Argentina	Ing. Agr.	Head, Div. Prospective Planning	San Jose, Costa Rica
García, Noel <sup>6</sup>	Nicaragua	M.A.	Agrarian Reform Specialist	Tegucigalpa, Honduras
Gardner, Andrew L. <sup>7</sup>	United Kingdom	Ph.D.	Agrostologist	Balcarce, Argentina
Gastal, Edmundo <sup>8</sup>	Brazil	M.S.	Agricultural Economist	Montevideo, Uruguay
Genis, Marigold	United Kingdom	B.A.	Registrar	Turrialba, Costa Rica
Gil Turnés, J. Benjamín <sup>9</sup>	Uruguay	Ph.D.	Educator	Buenos Aires, Argentina
Gorbitz, Adalberto	Peru	Ing. Agr.	Communicator	Turrialba, Costa Rica
Grajales, Guillermo	Colombia	B.Com.	Agricultural Projects Spec.	Lima, Peru
Granados, Hernán	Costa Rica	Lithographer	Head, Printshop	Turrialba, Costa Rica
Grijpma, Pieter <sup>10</sup>	Holland	M.S.	Forester	Turrialba, Costa Rica
Guerra, Guillermo	Colombia	M.S.	Agricultural Economist	Lima, Peru
Hepp, Ricardo	Chile	Ing. Agr.	Country Representative	Santiago, Chile
Herrera, J. Eugenio	Chile	M.P.I.A.	Administration Specialist	San Jose, Costa Rica
Herrero, Federico	Costa Rica	M.S.	Country Representative	Panama, Panama
Hernández, Aurelio J.	Cuba	C.P.A.	Administrative Assistant	Guatemala, Guatemala
Hidalgo, Oscar	Nicaragua	Ph.D.	Physiologist	Turrialba, Costa Rica
Hutchins, Lee M. <sup>11</sup>	United States	Ph.D.	Plant Pathologist	Turrialba, Costa Rica
Katiyar, Kampta P. <sup>12</sup>	India	Ph.D.	Entomologist	Turrialba, Costa Rica
Lackington, H. Thomas <sup>13</sup>	Chile	M.A.	Sectorial Economist	Bogota, Colombia
La Gra, Jerry <sup>14</sup>	United States	M.A.	Agricultural Projects Specialist	Port-au-Prince, Haiti
Lawrence, Jeremy <sup>15</sup>	United Kingdom	Ph.D.	Plant Pathologist	Turrialba, Costa Rica
Leiva, Joaquín	Chile	Ing. Agr.	Country Representative	Quito, Ecuador
León - Velarde, Carlos U. <sup>16</sup>	Peru	M.S.	Consultant and Instructor Animal Husbandry	San Jose, Costa Rica
Lombardo, Heraclio A. <sup>17</sup>	Panama	Ph.D.	Coordinator, UCR/IICA	San Jose, Costa Rica
MacDonald, Malcolm H.	United States	Ph.D.	Associate Deputy Director General for Technical Affairs and Planning	San Jose, Costa Rica
MacLean, Alejandro	Peru	Ing. Agr.	Communicator	San Jose, Costa Rica
Madrid, Carlos	Colombia	M.S.	Deputy Director General	Montevideo, Uruguay
Maltos, Joel <sup>18</sup>	Mexico	Ph.D.	Animal Husbandman	San Jose, Costa Rica
Malugani, María Dolores	Uruguay	M.L.S.	Directress IICA - CIDIA	Guatemala, Guatemala
Marull, José D.	Chile	Ph.D.	Associate Deputy Director General for External Coordination	Turrialba, Costa Rica
McKenzie, Thomas A.	United States	M.F.	Forester	Washington, D.C. Turrialba, Costa Rica

- 1 Effective February 26, 1973
- 2 Effective February 1, 1973
- 3 Effective January 24, 1973
- 4 Effective May 3, 1973
- 5 Agreement between the Regional Office for the Andean Zone and the Colombian Agricultural Institute (ICA)
- 6 Until October 20, 1972
- 7 Until November 30, 1972
- 8 Effective April 26, 1973 in Brasilia, Brasil as Director of EMBRAPA
- 9 Effective August 7, 1972
- 10 Assigned by the Government of the Netherlands
- 11 Scientific Resident
- 12 Until April 30, 1973
- 13 Until February 27, 1973
- 14 Effective October 26, 1972
- 15 Resident Scientist, assigned by the Government of Great Britain
- 16 Effective March 5, 1973
- 17 Until January 31, 1973, Technical Assistant
- 18 Leave of absence since May 22, 1973

Name	Nationality	Academic Degree	Position	Location
Mendoza, Luis A.	Bolivia	Ph.D.	Administration Spec.	Lima, Peru
Merea, Agustín	Peru	Civil Eng.	Irrigation Specialist	Buenos Aires, Argentina
Millar, Agustín <sup>1</sup>	Chile	Ph.D.	Irrigation Specialist	Petrolina, Brazil
Miranda, Heleodoro <sup>2</sup>	Ecuador	M.A.	Agricultural Research Specialist	San Salvador, El Salvador
Miragem, Samuel	Brazil	Ing.Agr.	Agricultural Economist	Porto Alegre, Brazil
Moh, Carl C.	United States	Ph.D.	Cytogeneticist	Turrialba, Costa Rica
Molestina, Carlos	Peru	M.S.	Head, Public Information Division	San Jose, Costa Rica
Montenegro, Isberto	Costa Rica	Newspaperman	Press Officer	San Jose, Costa Rica
Montero, Emilio	Chile	M.S.	Agricultural Economist	Montevideo, Uruguay
Montoya, M. Jorge	Peru	Dr.Sc.B.	Country Representative	Port-au-Prince, Haiti
Montoya, Luis A.	Peru	Ph.D.	Executive Secretary, Coop. Program for the Development of the American Tropics	Belem, Brazil
Morales, Efraím	Costa Rica	M.R.P.	Head, Annual Planning Division	San Jose, Costa Rica
Moran, Michael <sup>3</sup>	United States	M.S.	Coordinator, Marketing Program	San Jose, Costa Rica
Müller, Ludwig	Germany	Ph.D.	Coordinator, Coop. Prog. Rio Grande do Sul	Porto Alegre, Brazil
Morillo, Francisco <sup>4</sup>	Venezuela	Ph.D.	Regional Director	Lima, Peru
Muñoz, Víctor <sup>5</sup>	United States	Administration	Protocol Officer	San Jose, Costa Rica
Muñoz, Héctor	Mexico	Ph.D.	Animal Husbandman	Turrialba, Costa Rica
Murcia, Héctor <sup>6</sup>	Colombia	M.S.	Country Representative	Mariagua, Nicaragua
Nadal, Francisco	Bolivia	Ph.D.	Economist	San Jose, Costa Rica
Naranjo, Gerardo <sup>7</sup>	Ecuador	Ph.D.	Educator	Bogota, Colombia
Navas, Bolívar Gil	Ecuador	Ing.Agr.	Educational and Social Sciences Specialist	Quito, Ecuador
Ogle, Richard	United States	Ph.D.	Management Specialist	Guatemala, Guatemala
Oliart, Francisco <sup>8</sup>	Peru	M.S.	Special Assistant	San Jose, Costa Rica
Orchard, Jorge	Chile	Lawyer	Agrarian Law Specialist	Bogota, Colombia
Ortiz, Egas, Jaime	Ecuador	M.S.	Micro-economist	Bogota, Colombia
Páez, Gilberto	Paraguay	Ph.D.	Head of Statistics and Computer Unit	Turrialba, Costa Rica
Paulette, Miguel	Peru	M.S.	Coordinator, Professional and Scientific Associations	Caracas, Venezuela
Pérez, Manuel A.	Chile	C.P.A.	Chief, Personnel	San José, Costa Rica
Peschiera, Marco A.	Peru	Ing.Agr.	Country Representative	Santo Domingo, República Dominicana
Pinto, Joao Bosco G.	Brazil	Ph.D.	Agrarian Reform Spec.	Lima, Peru
Pinchinat, Antonio	Haiti	Ph.D.	Geneticist	Turrialba, Costa Rica
Quiroga, Víctor <sup>9</sup>	Bolivia	M.S.	Consultant and Instructor Statistics	San Jose, Costa Rica
Ramsay, Jorge	Chile	Ing.Agr.	Country Representative	Caracas, Venezuela
Rangel, Jefferson F.	Brazil	M.S.	Special Advisor of Foreign Relations and Secretary of the Board of Directors	Washington, D.C.
Ras, Norberto	Argentina	M.A.	Country Representative	Buenos Aires, Argentina
Ringuelet, Julio A.	Argentina	Ing.Agr.	Country Representative	San Salvador, El Salvador
Rodgers, Stanley H.	United States	B.A.	Director, Administrative and Financial Affairs	San Jose, Costa Rica
Rodríguez, Manuel	Chile	Ing.Agr.	Regional Director	Montevideo, Uruguay
Rojas, Emilio	Peru	M.S.	Agrostologist	La Paz, Bolivia
Rosado, Humberto	Mexico	Ph.D.	Regional Director	Guatemala, Guatemala
Rosero, Pablo	Ecuador	M.A.	Forester	Turrialba, Costa Rica
Ruiz, Manuel	Peru	Ph.D.	Nutritionist	Turrialba, Costa Rica

1 Effective November 28, 1972. Temporary Contract by Agreement MINTER/IICA

2 Was in Guatemala, Guatemala, up to October 31, 1972

3 Effective October 1, 1972

4 Effective January 16, 1973

5 Until March 11, 1973, Protocol Officer

6 Effective November 2, 1972

7 Until November 15, 1972 in Lima, Peru

8 Until March 15, 1973, Advisor of the General Director

9 Effective February 15, 1973



Name	Nationality	Academic Degree	Position	Location
Rulfo, Fernando	Mexico	M.Ed.	Communicator	Guatemala, Guatemala
Salinas, Luis	Peru	Ing.Agr.	Communicator	Lima, Peru
Sandoval, Leopoldo	Guatemala	Ing.Agr.	Agrarian Reform Spec.	Guatemala, Guatemala
Schlottfeldt, Carlos	Brazil	Ph.D.	Dean, Graduate School	San Jose, Costa Rica
Shurtleff, Don L.	United States	B.A.	Special Advisor and Alternate Representative to the USA	Washington, D.C.
Sterringa, Jacob <sup>1</sup>	Holland	Ing.Agr.	Forester	Turrialba, Costa Rica
Soikes, Raúl <sup>2</sup>	Peru	Ph.D.	Educator	Quito, Ecuador
Soria, Jorge	Ecuador	Ph.D.	Geneticist	Turrialba, Costa Rica
Suárez de Castro, Fernando <sup>3</sup>	Colombia	M.A.	Technical Support Director	San Jose, Costa Rica
Sylvester, Francisco <sup>4</sup>	Peru	Ing.Agr.	Educator	Caracas, Venezuela
Sylvain, Pierre G.	Haiti	Ph.D.	Horticulturist "Emeritus"	Turrialba, Costa Rica
Tonina, Teodoro Andrés	Argentina	Dr.Cien.Agr.	Agricultural Programmer	Santiago, Chile
Torrealba, J. Pablo <sup>5</sup>	Chile	Ph.D.	Marketing Specialist	San Jose, Costa Rica
Torres, José A. <sup>6</sup>	Costa Rica	Ing.Agr.	Coordinator, Special Programs in Costa Rica	San Jose, Costa Rica
Torres, Hugo	Colombia	Ph.D.	Marketing Specialist	Lima, Peru
Unterrichter, Cristóbal <sup>7</sup>	Italy	Ing.Agr.	Agrarian Reform and Settlements Specialist	Quito, Ecuador
Uribe, German <sup>8</sup>	Ecuador	M.A.	Country Representative	Tegucigalpa, Honduras
Valenzuela, Joaquín	Chile	Ing.Agr.	Regional Development Specialist	Caracas, Venezuela
Vallejo, Nelson	Ecuador	M.S.	Country Representative	La Paz, Bolivia
Vaz, Jorge Marques	Brazil	M.S.	Agricultural Economist	Santiago, Chile
Veras, Arnaldo	Brazil	B.C.E.	Agricultural Economist	Montevideo, Uruguay
Vieira, Pedro Merçon	Brazil	Ing.Agr.	Agricultural Credit Specialist	Rio de Janeiro, Brazil
Vigués, Enrique	Spain	Ph.D.	Head, IICA-AID Program	San Jose, Costa Rica
Villacis, Fabio <sup>9</sup>	Venezuela	Ph.D.	Agricultural Planning Specialist	México, D.F., Mexico
Villavisencio, Mauro <sup>10</sup>	Peru	Ing.Agr.	Country Representative	Bogota, Colombia
Vohnout, Karel	Ecuador	Ph.D.	Nutritionist	Turrialba, Costa Rica
Yopo, Boris <sup>11</sup>	Chile	M.S.	Educator	Lima, Peru

1 Resident Scientist, assigned by the Government of the Netherlands

2 Effective January 23, 1973

3 Until February 2, 1973, Regional Director of the Andean Zone

4 Effective November 1, 1972

5 Effective January 24, 1973

6 Until March 31, 1973, Director of Official Relations and Public Information

7 Until November 30, 1972

8 Effective August 16, 1972

9 Effective January 20, 1973

10 Effective June 1, 1973

11 Until February 19, 1973, was in Mexico, D.F., Mexico

*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 following were chiefly responsible for this work:

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